An Address
ON
THE PHYSICIAN AND THE PATHOLOGIST ON HEART FAILURE.*

BY
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IN my youth it was a common jest to ask what N. or M. died of, the witty answer being "shortness of breath of course." The jest has vanished, but the platitude remains, with some alteration of the formula, which, instead of "shortness of breath," now runs "of heart failure." In the obituary notices of our current journals we read daily of these deaths by the half-dozen, that N. or M. died of "heart failure"; and the vogue of appendicitis is threatened. Now, do we owe this new fashion to the physician or to the pathologist? for it is often worth while to examine the straws floating in the wind; we may learn something from some of them. Is this a parrot phrase put up as a kind of shorthand between the doctor and the registrar of deaths? or does it, like appendicitis, signify a fresh point in pathology, claiming its catchword? Does the phrase mean that a snap of the heart stopped the whole machine, otherwise capable of working on, as a snap of a connecting rod may stop the engines of the *Olympic?* or does it mean that the heart was the *ultimum moriens*, and that, so long as this central organ held to it, death was kept at bay? In this case to say that one died of "heart failure" is surely as empty a truism as to say that he died of "shortness of breath." On the other hand, as it is true that we have of late years learned more—much more—of the heart's work and of its diseases, both on the clinical side and on the side of pathology, so the new phrase may be a shadow thrown by some shift of position—whether clinical or pathological—in our view of the heart and its functions. Four or five years ago, when engaged on an article on the treatment of heart disease for Musser and Kelly's *System of Therapeutics*, I was brought closer to this problem, and found the answer so difficult that it has occupied much of my attention since; and to-night I ask you to help me towards some solution of it.

Now, if I appeal to a clinical physician, asking him what he knows about "heart failure," I shall get a ready answer; I shall hear of many a case of sudden and mortal stoppage of the heart; of heart failure in infections; of cardiac dilatation and defeat under high pressures, venous or arterial; of senile decay, so corroding the heart that it can work no more; of angina pectoris; of aortic regurgitation, and so forth—his data are in plenty; his opinions decisive. And likewise, when I betake myself to the pathologist, I find him no less ready for me: from him I hear of fatty degeneration; of "cardio-sclerosis"—whatsoever this may mean; of rheumatic, diphtheritic, and such-like myocarditis; of fibroid disease of the ventricular walls; of sapping of the *a–v* bundle, and so forth; data again in plenty, opinions decisive. But when I desire to link up the two classes of information; when I confront the physician with the pathologist and seek to correlate the times, periods, and modes of disease and death the one with the other, I find myself but little nearer to practical guidance than I was before. Of course, we all know that a "fatty" heart is not so good as a sound one; we all know that a senile heart will not sustain the attack of influenza like a young one; we all know now that damage of an *a–v* bundle may disconcert the rhythms; but when we ask the physician to draw some parallel in the living patient between the formidable modes of decay described by the pathologist; how and when these degradations are manifested; how, in the long course of cardiac decay, the imminence of sudden death is to be foreseen and provided against; or how, indeed, we are to know that any such process is at work at all; or, lastly, how in a case of known heart disease the degrees of its advancement and of the cardiac reserves are to be noted and tested—then the physician retires from the argument. And so with the pathologist: when we show him a heart from a case of sudden death he will confidently demonstrate to us on the specimen why a heart so diseased could not have gone on; if beside this one we place another heart—still more diseased, it may be—and tell him that the possessor of this heart lived for long enough, and perhaps in the end died of something else; or if we show him another heart in which, by the poison of rheumatic fever, the tract of Tawara was eaten away, and yet, notwithstanding, there was during life no dissociation of auricle and ventricle, he in his turn retires from the argument, saying that he is not concerned with clinical conundrums. Thus we have the physician and the pathologist trotting each on his own side of the hedge, each intent upon his own scouting and his own bearings, and neither able as yet to reconcile his own observations with those of his comrade, both of them being perhaps a little too indifferent to the need of mutual counsel and comparison.

Whether it be, then, for lack of mutual co-operation or because of the perplexities of the subject, the interpretation of cardiac pathology in terms of clinical medicine so far from becoming clearer has darkened, and the intricacies of the path have become more baffling. Our fathers, knowing less of the entanglements of the subject, and newly provided with a collection of the blunter facts of morbid anatomy, took the matter more easily. That people died suddenly of heart disease was for them an old story; when, therefore, they were introduced to diseases of the valves of the organ, and to coarse lesions of its substance, their difficulties were almost solved. The patient is dead, here is the lesion which caused his death; what more does one want? But, as pathology became more and more curious, these simple solutions became less and less acceptable. Kirkes, Bence Jones, Wilks, Fagge, T. H. Green, and many others with them, began to demur. In the dead man they may have discovered lesions enough, and apparently more than enough, to cause his death, but the man had died suddenly, and the lesions under demonstration were of long standing, or in a series of such cases were very various in seat and nature. Again, in a series of such cases valves were diseased and not diseased; kidneys were diseased and not diseased; atheroma was considerable and inconsiderable; the ventricles were dilated or were not dilated; the myocardium was in extreme decay or virtually normal; and its lesions were now focal, now diffused. Thus gradually it dawned upon the pathologist that the problems of cardiac failure were not so simple as in the rise of morbid anatomy had been supposed; and upon the physician, that his clinical methods were fallible indeed, far more so than had been supposed during the rise of stethoscopy. By what system of compensations was it that the same heart could be at once fairly competent clinically and yet pathologically the seat of old and intimate decay? By what system of compensations could a heart go on fairly well, or indeed without suspicion, while its structure was being undermined? Surely there ought to have been some stage of incompetency or at least of falter before the sudden collapse?

In no organ is this lack of concord between the signals of life and death so disconcerting as in the heart. In all living structures there is a factor of safety, that potential which in the heart we call reserve, but in none, perhaps, is it so capacious as in the heart. Yet of this reserve, of what the heart can do in case of need, we have no scientific measure; the microscopist cannot detect it, the clinician has no valid tests for it. At one time it maintains a defective heart; at another time it betrays a heart which, to all appearance, if not impeccable was at any rate not plainly corrupt. So more thoughtful observers began to put the matter more cautiously, and to say that "when a patient succumbs to heart failure certain degenerative changes are *usually* found in the myocardium and vessels, and these are *supposed to* account for the heart failure." Evidently even yet some more refined investigation into the phases and intricacies of cardiac qualities must be instituted if these apparent caprices, clinically speaking, of the heart of man are to be explained, computed, and foreseen. "Heart failure" is evidently a very composite notion—one which must be submitted to a no less penetrating analysis. We begin to learn that in the heart, as we learn in less striking ways in other forms of organized matter, that complexity of structure and conditions mean

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not less but more stability; that equilibrium endangered in one direction, or in more than one, may be supported by readaptations of other factors of the concert; so that the organ, if it may not be restored to its pristine capacities, may be steadied into some tolerable adequacy such as, under favourable circumstances and within limits not too wide, to preserve it from default. The heart of an active undergraduate slightly and temporarily impaired by a sharp catarrh may by the stresses of rowing become gravely harmed and give rise to unmistakable clinical symptoms, while a senile heart far more radically vitiated may amble comfortably along the serener paths of tranquil old age. *Non intelligitur quando obrepit senectus.*

To pass from these general reflections into more concrete observations, we may begin either with the clinical or the pathological side: as the clinical side is the field of practice, let us begin there; remembering how Goethe taught us that the general is always to be found in the particular. In the clinical field we shall first be impressed by the part of the heart in almost all diseases, and under conditions such as anaesthesia. In infections we know that the heart is concerned in three ways: in some of them it is directly attacked; in others it seems to suffer rather from a general depreciation in common with other parts and tissues, an impairment due apparently to pyrexia or to some more diffuse effect of the specific poison; in others, again, from a dissociation from its peripheral complement, from a loss of tone in the "peripheral heart," so that it beats the air in vain. Now, for these different conditions have we any crucial symptoms by which to distinguish them? Have we in a particular case any criterion by which, for instance, in an infectious disease, we can discriminate myocardial lesion, myocardial enfeeblement of a more general and temporary kind, and slackening of the peripheral circulation? Moreover, these several factors overlap each other, cross each other, and supplement each other inconstantly, and in degrees of which appreciation seems very difficult. Nay, we are well aware that in infections—as in diphtheria, scarlet fever, rheumatic fever, pneumonia, etc.—a diagnosis of direct attack upon the myocardium is usually, perhaps, beyond our methods; if in rheumatic fever dilatation is not an infrequent accompaniment, in other infections, as in diphtheria, it is at least frequently absent. And in chronic myocardial deteriorations is it too much to say that in the majority of cases of sudden or rapid death the underlying condition is not detected till once for all on the *post-mortem* table?

From and since my student days attention to cardiac disease has taken various directions, dependent on the various improvements of our means of diagnosis. As a student I witnessed the developments of auditory diagnosis—methods which certainly served to detect many cardiac diseases, such as pericarditis and mitral stenosis, not decisively demonstrable before. Then, by the efforts of Sansom, Ewart, Lees, and many others, especial emphasis was laid on percussion as a means of measuring the dimensions of this chamber or of that—a method by later disciples pushed to extravagant lengths or used with indiscriminate assurance. The sphygmograph came next, and from it more was expected than it could give; though twenty years later it was restored to practice by James Mackenzie with largely developed powers; still even thus improved the instrument could tell us only certain things, chiefly facts about rhythm—facts important enough, but, excepting occasionally in respect of pulsus alternans or dissociatus, throwing little light upon myocardial values. Meanwhile pressure gauges were to open out the way for us. Inventors made and improved these instruments, and much was attained in measurement of maximal and minimal pressures and of pulse amplitudes; but after a while we found that we were, perhaps, as far as ever from appreciating the states of cardiac reserve; as much as ever in cardiac disease we were taken by surprise by sudden deaths. Again, the *x*-ray method, and at this moment the method of the electrocardiogram, are, or were, to place in our hands tests of myocardial dynamics; but hitherto we have had to be content with facts which, however interesting, do not give us the intimate criterions which we desire; for cardiac potential we are still without any gauge.

From these introductory remarks, gentlemen, you will infer, and infer correctly, that I do not intend to dwell upon what I may call broadly Valvular diseases of the heart. In the valvular diseases we can often, generally perhaps, form some approximate forecast; the conditions are more frankly mechanical: in some of these cases the myocardium may count for much, but generally speaking it is the static structures rather than the dynamical potentials which determine the issue. If in a few instances, as in aortic regurgitation, the heart may drop out without warning, yet as a rule valvular diseases of the heart do not end suddenly; as a rule we may rely on it that a comparatively intact muscle will fight with fairly good reserve forces till defeated by accumulating venous stresses, and by those regional falls in velocity often known by the rather inept term of "backward pressure." And of these shortcomings we have for the most part no insufficient indications in symptoms and signs.

From the bearing of my essay it will appear that in the class of cases to be discussed I can say little about symptoms; for my point is that, even in the gravest cases of myocardial lesion, symptoms may be none; still, there are a few remarks of a critical kind to be made concerning alleged or occasional symptoms. Moreover, the problem of sudden death—that is, of absence of symptoms during the main run of a myocardial lesion, even to an extreme period—is not materially altered, if we include certain other cases in which, indeed, some symptoms did precede death, but did not put in an appearance till the lesion was far advanced. Dyspnoea, for instance, or falterings in the pulse, or, again, syncopic phenomena, if they appear at all, may not, and commonly do not, appear till the malady has entered upon its final stage; so that the issue is removed by but one step from a sudden death.

But, before considering these admittedly late and almost irremediable symptoms, let us dwell for a few minutes upon any symptoms or signs from which more timely warning may be obtainable, such as dislocation or readaptation of the chambers; murmurs, unless as superfluous signs of demolition, we may disregard. Hypertrophy of the ventricles is so alien to intrinsic degeneration of the myocardium that we may pass it over; but in passing I would say that the alleged intrinsic instability of hypertrophy—say of the left ventricle—apart from the general instability of the diseased individual so affected, seems to me to lack any serious proof. Apart from the causes and conditions of the hypertrophy in the particular case, I know of no evidence that the mere hypertrophy depends upon any encroachment on the normal reserves of the heart. So far as evidence yet goes, a hypertrophied myocardium is as good as a normal muscle; if the need for it be temporary, the part will recede to its normal dimensions, as if no such change had ever taken place; nor does a persistently hypertrophied myocardium stand at any intrinsic disadvantage. Whatever essayists may argue, we do not *know* that it is more easily fatigued, or more liable to degenerative disease; it stands at the disadvantages in which all parts of an embarrassed organ are involved, and no more.

Dilatation we cannot dismiss so readily. It is true that there is nothing very stealthy about a dilatation which is an accommodation for an excessive output or residuum; and, indeed, we need not take alarm at a dilatation significant of a loss of tone, if we have reason to believe that it depends on this only, and not upon a textural dissolution. If, however, it be a result of myocardial disintegration—as, for instance, in a heart of fatty infiltration in an obese person—a state which is nearly always associated with an unknown amount, often considerable, of fatty degeneration also, then we may well be anxious. Unfortunately, in these persons, with their brawny chests, an accurate delineation is not often practicable. But here we have to halt, or even to return upon our steps; the wall of an enfeebled heart, so the unwary would say, must yield, and yielding signify to the careful observer an increasing dilatation. So it would seem, no doubt; but so it is not—not as a rule. It is a strange thing, but one too generally acknowledged to need arguing here, that more often than not a degenerate ventricle does not dilate; not rarely it diminishes in bulk. There is no direct relation between dilatation and tissue change.

I am disposed to mistrust too ready a resort to logical explanations by severance of one cardiac factor from another; still it would seem as if the endowment of tonicity might maintain in position even a decayed—an extremely decayed—ventricle. Of the explanation there is much

doubt; of the absence of dilatation in such cases, even in the majority of them, there is no doubt. And it is still more certain that dilatation is no gauge of the histological condition of the myocardium; in some cases, as in acute rheumatism for instance, an impaired ventricle may be attended with dilatation; in others, as for instance in diphtheria, no such correlation may be found, usually is not. The difference may lie in a contrast between focal lesions and diffuse. A wider percussion area after effort is a test full of fallacies. We cannot admit, then, with the Leipzig school, that dilatation is any measure of the quality of the myocardium.

If, then, the delineations of the heart's dimensions which we obtain by percussion, or even by *x* rays, give us no constant or trustworthy criterion, what of auscultation? Well, we are but little better off. The textbooks complacently repeat that feebleness of the apex beat, falling off in the tone of the first sound, and prevalence in the same area of a thin acute second sound, are signs of myocardial degeneration. So they may be; but they are neither obligatory nor, when present, conclusive. In cases of atherosclerosis, with substantial myocardial deterioration, the impulse may be increased, usually it is not reduced; the sounds also may be good enough, or a snappy second may signify no more than a stiffened aortic valve, a condition of no great relative importance. Yet such patients often die suddenly, and at the necropsy the left ventricle may be stuffed with callosities, and the muscular largely supplanted by connective fibre. The contrast of small pulse and full apex beat need mean no more than a large area of vaso-constriction. And, as to defect of impulse and defect of sound quality, let any experienced auscultator ask himself how often he has found himself misled by ill definition of an apex beat, by a poor first sound and a thin second—severally or even together—in patients who were little or none the worse for the peculiarity. Among scores of such instances I recall two, both in men approaching threescore and ten. One of them had been reduced in health by business mishaps and by a gall-stone abscess; the other after many years of keen and arduous work was out of heart and anaemic. Neither was obviously emphysematous; yet in both the cardiac impulse was but feebly perceptible, if at all; the first sound was poor, the second thin and extensive. In both cases anxious consultations were held with "cardiac experts," and in both a diagnosis of cardiac degeneration was pronounced with little hesitation. The one lived thirteen years afterwards, and died at the age of 83 of some incidental illness; the other ten years later, at the age nearly of fourscore, is still giving his distinguished services to his country. These out of a many such, prove that a fagged or anaemic patient may without any grave affection of the heart nevertheless present for a while the defects of impulse and the quality of sounds which in another might truly signify such a flaw. These equivocal physical signs, then, are not criterions.

To turn from signs to symptoms. Syncopic or vertiginous phenomena often accompany cardiac default; but, whether from dyspepsia, slight labyrinthine disturbance, vasomotor atony, or other obscure cause, we are too familiar with this kind of symptom to rely upon it as crucial in the diagnosis of failing heart. If it be added to other signs and symptoms of heart disease, it may indeed enter, and enter gravely, into a diagnosis as cumulative evidence; but taken alone, or indeed without strong corroboration, it is a very equivocal item.

But surely by the pulse we ought to be able to make a fair inference concerning the state of the heart. Yet even here again we are baffled. It has, indeed, been asserted again and again that the profounder changes in the myocardium are betrayed by an irregular pulse; but as our experience of cardiac disease has widened we have learnt that in the rhythms we have rarely any criterion of cardiac values. Impairment of certain tracts should, so we think, be betrayed by altered rhythms, but we have no definite guide even here; we have learnt by autopsy that even the tracts of Tawara may be seriously undermined by an infectious disease without derangement of rhythm, so likewise may the nervous masses in the coronary sulcus. I think I may rely on a general agreement—an opinion definitely expressed by von Leyden, Bäumler, Ebstein, and many others—that in the pulse we have no guide to myocardial damage, acute or chronic. Positive variations of the pulse may mean little; and under the cover of normal rates, rhythms, and pressures decay may progress to the utmost. Notwithstanding there are two variations of the pulse which, when present, are ominous; these are a persistent rise of rate, and the pulsus alternans. On pulsus alternans I will not dwell, for Professor Wenckebach, Dr. Mackenzie, and Dr. Lewis have reinforced the lesson that this change is, if not invariably yet generally, a herald of myocardial defect. However, as the sign is no common feature of such defect, but a rare one—one far more often absent in failing myocardium than present—it is as a clinical criterion inconstant. Nevertheless, we shall remember Dr. Mackenzie's warning that, if imperceptible to the finger, it may be revealed in a sphygmographic tracing. The only exception to its significance as a note of disease is an occasional appearance of it under the action of some poisons. The researches of H. E. Hering[1] on the causes of pulsus alternans, if not strictly relevant, are so interesting that one is tempted to mention them here. The phenomenon depends, so it appears, on variable refractory periods of the fibres, some fibres being late in response, so that partial asystoles are summed up in rhythmical recurrence. Thus vagus stimulation, by slowing beats, may reduce pulsus alternans and substitute a continuous hyposystole, though occasionally it reinforces it. Such interferences suggest that between the myocardial fibres there are some obscure differences—at any rate, in certain hearts. The accelerans, on the other hand, as it quickens the rate, may increase the alternation or make it manifest by modulations of the refractory discords. Thus the cardiac nerves can not only influence the systolic volume directly, but, by modulating the refractory phases, also indirectly.

In another way the pulse may signify decay of the myocardium—namely, by a persistent change of rate, whether of acceleration or of retardation; though here, again, we have not a constant but an inconstant criterion. We have seen, or shall see, that the tract of Tawara man be profoundly marred without perceptible effect on the pulse; and it is common experience that a normal rate of pulsation is consistent with profound depravation of the left myocardium at large. Notwithstanding it has been strongly impressed upon me that a permanent change of rate is ominous of failing heart. On bradycardia, or again on tachycardia, I need not insist—these conditions are better and better recognized every day; I will insist rather on the less emphasized sign of simple acceleration. Let the pulse of a certain man be known as habitually 70, at rest 65–70; and let this pulse-rate be found to have become habitually ten more—that is, 85–90, on slight movements rising to 100 and over; and let this change show no substantial alteration under prolonged rest, let it fall, that is, under whatsoever rules of tranquillity of mind and body, never below 80–85; then heart failure is in the offing. If, moreover, with this acceleration there be attacks of faintness, or of slight dyspnoea on moderate effort, the failure of the heart's muscle is at hand; and but little amendment can be promised. Of course, before a final opinion is given, any possible nervous influence will be estimated; and the influence of coffee, tea, tobacco, and the like be eliminated, for in later life such agents often become less well tolerated. Two or three cases of this significance have impressed themselves on my memory: one of them in a patient of Dr. George Johnston, of Ambleside, a country gentleman of advanced years, but for his years of great activity, both of mind and body. In climbing over a stone wall into his own park he was aware of some little faintness, which might well have been a transient affair of little importance. However, he was persuaded to send for Dr. Johnston, who found his pulse at a continuing rate of 100–110. It seemed to the patient and his friends that to keep a vigorous man with all the appearance of health permanently at rest, or only to allow him to drive out in his carriage, was a serious decision. I saw him with Dr. Johnston twice at an interval of twelve months; and in spite of the demurs of his friends, who hinted at hypochondriasis or neurasthenia—neurasthenia does not come on in the later life of persons previously healthy—I could not but support Dr. Johnston's injunctions; for if during complete rest the pulse-rate were reduced under 100, or might fall even to 80, on exertion it returned to the higher numbers. Gradually, in the course of the next eighteen months, syncopic sensations at stool or under any more consider-

able effort, increased upon him, further and more ordinary symptoms of cardiac failure set in, and he succumbed without any abiding amendment. But here again, as with pulsus alternans, we have no criterion; acceleration of rate in myocardial breakdown is an inconstant phenomenon, and in certain peripheral relaxations may appear without any myocardial disease.

Of the many other and more familiar symptoms of heart failure, such as dyspnœa, slight oedema, slight albuminuria, cyanosis of ears and lips, fullness and tenderness of the liver, pulmonary crepitations, arrhythmia perpetua, etc., I need not speak; more or less sudden heart failure is frequent without any of these features; and in any case they usually signify late phases of the malady and speak only too plainly for themselves. Of the many symptoms to be discounted, I will refer only to arrhythmias pertaining to the extrasystolic kind, which in some cases are, to the inexperienced observer, terrific. One of the worst of these clumsy, bustling hearts I examined some time ago with Dr. Davies, of Histon, in an elderly gentleman, who, after a little careful treatment, was safely permitted to go about his business; and now I often see him engaged in public or social concerns, apparently without disablement. Another case, almost as troublesome, I witnessed about ten years ago in a gentleman, now living, then some 78 years of age; at Homburg he made a good recovery from some gouty conditions, and his heart practically recovered its steadiness. Almost as I write, he has, on the borders of fourscore and ten, successfully weathered an attack of genuine influenza. In these and such cases the heart may never recover its normal rhythm, but no harm may come of the disorder. The symptom group of every such case must, of course, be sifted carefully, for, on the other hand, in pneumonia or diphtheria a dropped beat may be the first presage of heart failure.

Sphygmomanometrical observations have proved, so far, to be of no use in the detection of myocardial disease. That under prolonged high arterial pressures the heart may be defeated is true enough; but this is not a myocardial decay. A test of blood velocity, which is probably always reduced, would be more trustworthy.

From the electrocardiogram we may in time get more definite hints. In general as age advances the ordinary height of the F(T) wave diminishes in relation to J(R), and in the dying heart it disappears altogether. It is premature, however, to say that from this variation a criterion of the state of the myocardium can be obtained; still a waning of this wave, and still more a negative oscillation, may prove to have a definite pathological significance, especially if the pauses are protracted. On the other hand, a persistence or recurrence of the juvenile type in adult life signifies a nervous factor. Fibrillation of the auricle no doubt signifies decay of the part; fibrillation of the ventricle may be one of the modes of sudden death, but is hardly consistent with survival.

I must not occupy your time with a discussion of the various devices for testing cardiac reserve proposed by Katzenstein, Graupner, and others; suffice it to say that, while some of them are inconvenient, none is effectual or even approximately indicative of the available capacity of the heart under observation.

Thus baldly I have tried to show from the point of view of the physician how indefinite, how inconstant, how obscure, are the symptoms and signs of myocardial insufficiency; let us see, then, what the pathologist has to say—if he with his scalpel and probe can offer us more definite measures of cardiac capacity. We shall say to him, surely you ought to discover why the patient died? why his heart or that man's heart broke down without warning? or in any case what was the critical point at which its resources could no more avail? But too often in his turn the pathologist gives the same uncertain sound. In this heart he found too little to account for death, in that too much—the patient had no business to have lived so long. On grounds as insecure as those of the physician, he finds one heart which, with comparatively little or even no evidence of decay (Cabot), surrendered at the first summons, or during life was obviously insufficient; and, conversely, another which by the very extent and chronicity of decay testified to the long period during which it had managed with silent tenacity to wage an unequal fight. From the side of morbid anatomy, then, the want of parallel, of apparent correlation, between the physician and the pathologist lacks nothing of its emphasis.

But, at the outset of this side of the matter, I would with all due deference suggest that in many a report from the *post-mortem* chamber to the wards the histological changes described are consistent with, or even declare rather the effects of the decomposition of death than of living disease. I have had to discard many a note recording blurred striation, nuclear alterations, "hyaline" change, etc., when without any record of date after death, or of the state of the atmosphere. Indeed, so regular is the tendency in the viscera to a focal distribution of their lesions that one may wisely—I will not say reject, but regard with caution, all reports of diffuse and uniform myocardial disintegration, as suggestive of *post-mortem* decomposition.

Of the kind of detriment called "fatty degeneration" opinions of late have undergone some fluctuation; but the term, for a while discarded, seems to be returning into use, though with some difference of interpretation. The distinction between fatty degeneration and fatty infiltration still holds its ground, though the extremes are rare, and between them lies every grade of transition. If in the obese heart much of the fat is to be traced to an interfibrous penetration, yet on the other hand in very few such hearts is this penetration unaccompanied with definite deterioration of the muscular fibres themselves. And if in "fatty degeneration" the droplets of fat may be but particles of unassimilated nutriment rather than a disintegration of muscle cell, or a metamorphosis of albuminous structures into fat, and if we cannot say that fatty degeneration alone is a myocardial regress i n, yet this delay of absorption and assimilation seems to signify some alteration of chemical change, if in rate only, and if so to be not without some modification of muscular energy. Aschoff does indeed go so far as to think this fatty manifestation may signify an excess of physiological activity. It is certain at any rate that, in the midst of it, the fibres and their striations may still be well defined (Aschoff, Lubarsch, and many others). In diphtheria beside the fatty deposits the muscle fibres are also obviously diseased. In old hearts with coronary sclerosis Kent's bundle itself may be thoroughly "fatty," yet with no apparent heart failure. On the other hand, in some toxic cases it would seem that the "fatty" state may be established in twenty-four to thirty-six hours. However, what I have to emphasize is the agreement that even well-marked fatty deposits, severe and diffused, may take place without any clinical evidence of heart failure. In this context, then, pathology can provide us with no criterion. That, as I have recently seen stated, the "fatty heart" is to be known by dilatation or by irregularity of rhythm cannot be maintained; these coincidences are quite inconstant.

In no circumstances is our lack of any criterion of cardiac capacity and of cardiac stability more painfully manifest than in the acute infections. Again and again, in such diseases as diphtheria, young and promising lives are cut short by heart failure without any more definite warning than the vague forebodings cast by the shadows of such cases gone before. The young man or young woman may be going on well, so far as clinical observation can tell us, and yet be within a minute of eternity. Sometimes a persistent increase or retardation of pulse-rate may hint at the danger; but more often there is no such sign of peril. Now, a heart to shut up in this way must have been gravely affected for some little time before. Again, after an infection as mild as a "common cold," more probably after an influenza, the patient has no warning that his convalescence is incomplete until he engages in some effort, such as a game of football, and then finds himself invalided for many a month to come. Without any clinical manifestation his heart had been the seat of occult disease. Here, again, our only guide is crude experience; we have no criterion. Tanaka[2] points out how remarkable it is that a "heart often functions well up to the moment of sudden death," yet after death the myocardium reveals disease both extensive and profound. The ventricle may or may not be dilated. In rheumatic myocarditis (Romberg, Cowan, Carey Coombs) sudden heart failure is less common, and usually is so combined with valvular lesions and dilatation that clinical symptoms are not wanting. Interesting as it is from a histological point of view, I must not in this context dwell longer upon it. Nor do

the distinctions, definite or transitional, demonstrated by Dr. Coombs and others, between acute interstitial and parenchymatous myocarditis much concern us here. We will pass on to chronic myocarditis.

In so-called "chronic myocarditis," again, probably not strictly an inflammation but partaking rather of an atrophic or degenerative nature, we find no closer correlation between the clinical and the pathological series. Cabot, in a remarkably able report[3]—one in which he compared clinical and pathological notes taken independently—says that he has quite given up attempting to diagnose chronic myocarditis; "in it diagnosis is a mere matter of luck. It has no clinical symptoms, no characteristic physical signs." So this point needs no farther labour.

Let us proceed, then, to fibrosis of the myocardium, an alteration which an eminent student of heart disease but a few weeks ago assured me was of great clinical importance. I demurred to this, for not only am I of opinion that this fibrous invasion may be wholly without clinical correlations, but, indeed, that we have not to spend much regret upon this indifference. Many years' experience has convinced me of the truth which Cabot[4] has lately reiterated—namely, that "not infrequently gross fibrosis of the myocardium is found in hearts which had been perfectly efficient during life." Dr. Hale White[5] also says of a fibroid heart that it is practically undetectable. This paradox is true of both forms of cardiac fibrosis—of the diffuse form described by Dehio[6] in 1899, and the focal form, in which the wall of the heart, especially of the left ventricle, is beset with callosities. These callous nodules or lumps were at one time attributed only to local ischaemia due to a closure of a coronary branch, by infarct or by sclerosis. Histologically, however, they do not essentially differ from myocarditic effects of other origin; moreover, recent research has demonstrated many a callus, towards which its particular coronary branch was open.[7] But these nodules, often old foci of toxic myocarditis, are not always to be found simply by slicing the ventricular wall with a knife; sections must be made and stained. Conversely, Kanthack and I, in investigating the effects of coronary disease on the heart, demonstrated on more than one heart that these arteries might both be blocked by atherosclerosis and yet the myocardium be normal enough for the age of the patient. Diffuse or dystrophic myocardial fibrosis Dehio attributed to venous stagnation, comparing such hearts with "cardiac kidneys" and the like; and it is true that fibroid ventricles are often dilated. Still, I have examined many hearts presenting this fibrosis in which evidence of venous congestion was not obvious. However, I must not occupy time on these points of pathology; suffice it to say that cardiac fibrosis, so far from being a cause of cardiac failure, seems not infrequently, as in hypertrophy with dilatation, to have some conservative value. Connective fibre is a less resilient tissue, and its elastic limits are narrower; but within them it is tougher. Syphilitic fibrosis is, of course, another matter; any effect this variety may have on the cardiac function depends on its site. "Cardio-sclerosis" may seem to be germane to this part of the argument; but I never succeeded in ascertaining from Huchard, or from his disciples, what the term signified. It seems to have been adopted rather for logical symmetry than for the complexities and elusiveness of Nature; and if it ever had any meaning at all it was as a cover for several different conditions. With fibrosed hearts, then, patients may, as Dr. Hale White says, die suddenly; but we have no criterion of its presence, nor can the pathologist tell us how or when it causes death, if indeed it does cause it; which is doubtful.

But, as time presses, let us now pass on from the histological nature to the sites of lesion. Is it less the nature than the position of a breach of continuity which determines the mortality? Here again I fear the answer of the pathologist is still equivocal, though it is true that closer methods of observation may prove more enlightening. The lesion, or the critical lesion, may be overlooked; for instance, Falconer and Duncan,[8] beside valvular lesions in a certain heart, found diffuse lesions in the right auricle (less in the left), while, save for a slight perivascular lymphocytosis, the ventricular muscle was normal.

In respect of site our thoughts turn promptly to the tract of Tawara, and perhaps to Wenckebach's area about the superior vena cava, for we must not be content to say that lesions in this area set up disorders of rhythm only. We readily suspect, in such a concert as the function of the circulation, that rhythmical discord may abut upon and issue in defective work. At first sight it seems that if scattered focal lesions—such as those described by Carey Coombs, Poynton, and others—might come short of gravely disturbing conduction, yet that such a check must follow a more diffuse and general invasion of these structures, for ventricular automaty, detached from the cardiac system, is certainly less effectual. Syphilis, by its proclivity for the septum, especially menaces Tawara's tract. Now some observers are of opinion that this tract, whether by its looser texture or by its peculiar blood supply by a twig from the right coronary artery, has in its disease some independence, be it more or less, of the rest of the heart.[9] Spots of haemorrhagic and leukaemic exudation, aortic rheumatic foci and the like are found not infrequently in this tract, especially in the left limb of it, when absent in other quarters of the heart. Tanaka insists, as I have done, on the curious maintenances of heart function and of medical confidence in not a few cases in which the myocardium or conductive tract proved to be in extremes of fatty degeneration, until in a moment death brought all to an end. This, he says, as Dr. Hugh Anderson has illustrated in the cat, is especially characteristic of old hearts, as contrasted with young ones.

But we must not, I think, make too much of this alleged independence; decay proceeds as often from the myocardium to the bundle and knot, and often, as Dr. Coombs has shown, both tracts and myocardium, if unequally affected, are attacked simultaneously. Saigo[10] examined 100 hearts from this point of view, and concluded that rheumatic nodules do often arise especially in the bundle; that regressive processes also—such as fatty vacuoles—come early in it; but that in brown atrophy and fibrotic hypertrophy the bundle may be involved, or may be free or nearly so. Lubarsch,[11] again, investigated 500 hearts on this complicated problem; in many he found changes, such as acute rheumatic nodules, predominant in and about the tract, especially the left limb of it. Brown atrophy he found to occur in both, if in unequal degrees. Lubarsch's observations may be summed up thus: In moderate focal fatty myocardium the limb of Tawara's tract may be quite free; or in extreme and widespread focal fatty myocardium the *a–v* bundle may be very slightly affected; or fatty change may be quite isolated in it, even the papillary muscles being free (but this is rare); or fatty change may be marked and extreme in the *a–v* tract, with very slight myocardial affection, say slightly in the papillary muscles only; or fatty change, moderate or much, may be practically alike and equal in both myocardium and bundle; and finally, Lubarsch thinks these variations are dependent upon vascular conditions, such as local retardations of blood velocity.

In Tanaka's cases of diphtheria the bundle was five times more, three times less, and four times equally affected with the rest of the musculature. "Only once was an almost isolated bundle-affection found." But in the bundle the changes are more diffused than in the rest of the myocardium. "But, he concludes, a sudden failure of the heart can also come about without essential lesion of the bundle; indeed, occasionally arrhythmia appears without any marked degeneration of the bundle."

I make no excuse for dwelling at this length on the pathological relations of the bundle and the myocardium, for in these might lie some explanation of the obscurity of the causes of continued cardiac function on the one hand and of sudden cessation of it on the other; but the interpretation is not yet. In some cases, it is true, the proper symptoms of dissociation are present, but in some they are absent; and as yet we have no histological elucidation of this inconstancy. In one of Lubarsch's cases, in which dissociation was complete, after death, while in the myocardium were found large focal callosities, in the bundle were only small ones, with some fresher spots of exudation and minute haemorrhagic points, none of them extensive enough to rupture continuity. On the other hand, many cases are published (by Reinecke and others[13]) in which, under what seemed distinctly to be complete demolition of the bundle, there was during life no dissociation. In one case[12] the whole bundle was calcified;

in others in which the tract seemed broken up dissociation was often incomplete; and sometimes there was only simple retardation. If one limb is affected there may be incomplete dissociation. In a few cases tachycardia has been observed. Dr. Coombs's researches, again, make it probable that acute rheumatic or septic toxins may far invade the tract without any characteristic symptoms during life. I will consider presently how far intrinsic and extrinsic causes (bundle, vagus, bulb) must co-operate; or, again, how far chemical perversions may be concerned in arrests of the heart.

I have alluded more than once to the part of the nerves in cardiac function, and so in the clinical surprises which we are discussing; but the nervous coefficients in these functions are very dark. Is it by means of nervous influence that a heart which is the seat of advanced disease may be carried along so far and so efficiently as again and again to deceive the clinical observer outright? We know that the heart is thickly beset with nervous fibres and ganglia, that the plexuses are motor in function, and that much, if not all, of the harmony of the circulation must depend, and intimately depend, on their integrity; but our new interest in Kent's and Tawara's tract has diverted research from these nervous governors. We may destroy aortic cusps without heart failure, we may poison the myocardium into extreme fatty change without immediate heart failure; but if with the soundest myocardium we cut the vagi, or even cut one only, the organ is promptly stopped—at any rate in dogs and cats.[14] Kronecker's experimental determination of a nervous co-ordinating centre in the upper third of the interventricular septum is well known. A needle puncture here (in the dog) produces fatal delirium cordis, a result not to be obtained by punctures anywhere else. But on inquiry it seems that the morbid histology of the nervous cells and fibres of the heart is very little understood; even their normal anatomy is vague, and the pathological records are very dubious. Our methods may be inadequate, but hitherto the allegations of morbid changes in the nerves do not amount to proof. Vagus alterations have been reported, but on scanty evidence; yet if these nervous strands and centres deteriorate, and we cannot suppose them to be immune to the lot of all organized structures, their irritation or decay may account for a waning cardiac reserve, and for unexpected heart failure, even in cases in which muscular degeneration may be inconsiderable. Romberg, Krehl, Rosenbach, all turn for explanation of the paradox of endurance, and of deferred crisis in degenerate hearts, not exclusively to the "immanent properties" of the organ, but also to its nervous endowments, and especially to its ganglionic integrity. Whatsoever our opinions on the rather academic controversy between the neurogenists and the myogenists, we shall not forget that the nervous system of an organ, such as the heart, is not only the conductor of its co-operative and harmonious concert, but also an instrument of its development. To Professor Langley we are chiefly indebted for such knowledge as we possess of the sympathetic system, and he tells us that although the ganglionic cells of the heart comport themselves differently from sympathetic cells, yet that such ganglia die rapidly if deprived of nutriment—as, for example, in animals bled to death. Oxygen may be more important to them than to nervo-muscular tissue, although they have a greater resistance to deprivations of oxygen than has the central nervous system.

And beside the intracardial nervous structures we have also the extracardial, the vagus and the bulb; not to mention those psychical influences which on the heart are supposed to have a peculiar potency. One would guess that a heart failure attributable to these influences is a cortical disturbance propagated through the vagus.

Again, the vasomotor system has degrees of reinforcement or default of which we have little notion. We do know that many a death attributed to the heart was due to a failure of the "peripheral heart," to a relaxation in large vasomotor areas. The "weak hearts" of women are often thus to be explained; their peripheral vessels are slack and labile. One is tempted, contrary however to present evidence, to dally with the hypothesis suggested by Henle, and ingeniously advocated by Hasebrock and Grützman,[15] that the peripheral heart—the muscular arteries and capillaries—act not so much as a break on the central propeller, but serve rather as forwarding machinery, a subsidiary means of propulsion.

And there is a side of vascular dynamics which is not fully realized—namely, the reciprocation of the several areas; or it is realized only between the splanchnic and the encephalic; yet these fluctuations are ubiquitous and incessant. If the warm hand be placed between the thighs, and the pulsations felt for a few minutes, the oscillations of vascular volumes, independent of respiration, will be clearly perceptible. And Müller[16] and Weber have shown that areas are very independent, and often conflict, and such pressure interferences must have their echo in the heart; if in an area dilated for work velocity is not to fall, there must be an equivalent and harmonious constriction elsewhere, or the heart will have to make up the difference. Even to move a limb determines at once an afflux of blood thither.

Once more, we have to remember the chances of sudden death by fat embolism, nerve toxins, pulmonary embolisms, and so forth; or possibly, as suggested by Dr. Hawkins-Ambler, by increases of the specific gravity of the red corpuscles. There are probably many subtle agents of which we have no idea, but which enter, alone or accompanied, into these nice poises of life; and alterations in molecular constitution invisible even to the "ultramicroscope." An old rubber band may to the eye present no change, but on use its loss of elasticity will become quickly apparent, and it will die suddenly. The heart of Dr. Hugh Anderson's elderly cat could not withstand the vagus inhibitions to which the young cat reacted indeed plainly, but which it withstood with security. There is a world within the visible features—a world of surface tensions, osmoses, reaction potentials, viscosities, differential pressures, etc., of which we know little. If we apply cold to the sinus area, we retard the rate of the whole heart; if heat, we accelerate it, as in fever; yet to the eye there is no tissue change, and to other parts of the heart such applications of heat or cold are apparently indifferent.

Still, if sound and not too old, the heart, as Sir James Goodhart has insisted, will stand almost anything; no combination of adverse factors will kill it. The distinctions, therefore, urged by Merklen, Hoffmann, Rosenbach, and others between anatomical and functional cardiac integrity are pushed too far; there can be no function without correlative molecular motions, and if the function continues irregular, the corresponding molecules cannot have returned to their normal pattern; there must be some dislocation, and this may be permanent—a "new set." For instance, I am told that if a piece of steel be fatigued by repeated blows, even to the point of fracture, although to the microscope no molecular alteration may be visible, yet a permanent molecular dislocation may be detected by a change in its electric conductivity. Perhaps we also some day may be enabled to gauge an old, a fatigued, or a poisoned heart by the test of electric conductivity. Now, if its texture has got a permanently new set, the heart is no longer sound, whether the intimate alterations be visible or invisible.

Another curious point about cardiac reserve, or what we think to be such, is that it is trainable. A man in training seems to have many times the reserve, the cardiac reserve, of one out of training. In athletic training the heart probably grows larger with its skeletal kindred, and therewith probably also the tone of its motor ganglia and of peripheral vascular system, and the capacity of the lungs are also developed. In Cambridge an old boatman readily tests an oarsman for staleness by drawing a finger down his cheek and noting the persistence of the ruddy line. Moreover, training is not a mere matter of heart and lung endurance; the acquired economy of the skeletal muscular groups must count also for much. We cannot analyse all these manifold factors. In some elderly persons the skeletal muscles seem to have been relatively too good; the heart was not able quite to follow them.

Then there is the world of chemical reactions in the heart; the ionic motions and substitutional interchanges of which we know little; but, from the behaviour of salt perfusions, they must be of the most intimate kind. The little we know we owe to such researches as those of Dr. Walter Fletcher and Mr. Barcroft. Dr. Gaskell showed years ago that to perfuse the heart with even a very weak solution of lactic acid is to stop it in diastole; a reaction due

to mere acidity, to the positive ion H. Stronger solutions drive it into rigor. Dr. Fletcher has shown that by a previous application of oxygen these effects can be prevented. The mammalian heart lying after death in an atmosphere of oxygen does not become acid, or but slightly so; and after perfusion with oxygenized Ringer's solution, even some hours after, no trace of lactic acid appears. Dr. Fletcher has shown me how many occult flaws there may possibly be in the balance of colloidal mechanisms in the cardiac muscle; and more than this—that the heart may have abundant fatty deposit in it, and yet the muscle cell on the motor side be intrinsically intact, and prove no more vulnerable than one histologically normal; and this he illustrated by the figure of an engine clogged with dirt and grease, which notwithstanding may do better work than another engine bright and clean but with tight bearings, or an unseen crack in its cylinder. When beyond unequal metabolisms we pass into the region of toxic influences we recognize again how near the edge our gyroscope may be revolving.

Finally we know that the heart's balance depends on that of many other parts also; the gaseous exchanges are not in the myocardium only, not even in the lungs only; they are burning in every muscular area, in every viscus. Thus, even if the haemoglobin be constant in quality and quantity, if velocity begins to fall we are in a vicious circle; velocity—which means oxygen exchange—slows down in every organ, especially in those which, beside the lungs, have a double capillary machinery, such as the liver and the kidneys; in these areas we very soon find evidences of stasis. And retardation in the lymph system also is not to be forgotten. Such defaults as these may for whiles miss or neutralize each other, but when at some unhappy moment a summation of adverse alternating conditions comes about—capillary retardations in the viscera, tissue calls, lymph pressures, vagus and vasomotor waves, psychic thrills—in such cases as these, cases not without their prior forebodings, we shall not be at a loss to comprehend at last the suddenness of death. But the riddle, which I have done so little to read, is the frequent suddenness of death in one who scarcely having known illness expires under no extraordinary effort; or in the peace of his own bed or elbow chair passes silently away.

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At the annual meeting of the board of governors of the Wolverhampton and Staffordshire General Hospital, held on March 12th, Dr. John Grout was elected a Vice-President in recognition of the valuable and memorable services rendered by him in connexion with the King Edward VII Memorial.

THE late Lord Wandsworth, a member of the firm of Stern Brothers, bankers, has bequeathed £10,000 to be used for medical research "as my old friend and doctor Sir William Bennett shall decide is best"; £5,000 to the Bolingbroke Hospital, Wandsworth Common; £1,000 each to the London Hospital and to St. George's Hospital, and £500 to the Hospital for Cancer, Fulham Road. After the payment of certain sums the residue of the estate, which it is estimated will exceed £1,000,000, has been left for the foundation of an orphanage to bear Lord Wandsworth's name.

THE third International Medical Congress on Accidents will be held at Düsseldorf in August (6th to 10th). Among the subjects proposed for discussion are the present state of the law as to compensation for accidents in different countries and the question of insurance against industrial diseases; the importance of early treatment directed to the restoration of functional disturbance after accidents; vascular disease and accidents; arthritis deformans and accidents; the influence of accidents on the origin and increase of tumours; methods of examination in cases of injury after accident. Communications relative to the Congress should be addressed to Professor Liniger, Düsseldorf.

A Post-Graduate Lecture

ON

THE ESTIMATION OF HEART POWER:

AND THE TERMS

BLOOD PRESSURE; HYPERTENSION; HYPERPIESIS; HYPERTONUS.

BY

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GENTLEMEN,—A request made by some of you that I should give a clinic on the present position of "blood-pressure" was communicated to me, and I of course at once expressed my willingness to speak to you on the subject.

At the outset permit me to say that, in the consideration of many clinical problems, the accuracy of our first step often determines the accuracy of our further steps, and of the conclusion we ultimately arrive at. As illustrating this proposition I would impress upon you that it is necessary to realize that, when we as clinicians feel the radial pulse, the initial and primary object in doing so is to obtain information as to the vigour or strength of the heart. The second object is to gain some knowledge of the condition of the channels through which the blood is propelled. As directly bearing upon our subject I recall to you various terms used in relation to it.

BLOOD PRESSURE.

This term means the pressure exercised by the blood inside the vessel, and the driving power of the heart is judged of by the estimate we form of this pressure of the blood upon the arterial wall. In much recent writing the term unfortunately is used to indicate, or as a mere synonym for, haemomanometer readings. Whatever the blood pressure be inside the artery it represents in some measure the power with which the blood is driven out of the left ventricle. This is the plain and fundamental fact, and this is the reason why the examination of the pulse occupies such an honoured place in our clinical methods. Other words are, however, in use in the study of this same problem of heart power.

HYPERTENSION.

The term "hypertension" is at present in common use, and has, I think, been popularized by the French school. In past years high and low tension pulses were spoken of. The word "tension" applied in this way was, however, long regarded by critical clinicians as unsatisfactory. The question always was whether it merely meant the amount of pressure exercised by the blood on the arterial wall or the taut state of the wall caused by the pressure, combined with changes in the wall itself. So far as I am able to see, the use of the term "hypertension" in no way answers the old question, although in many quarters it is treated and used as a "blessed word" and placed above the zone of criticism. Other clinicians steadily abstain from using the word "tension," in any of its possible meanings, as applied to the pulse, and with this attitude I am in complete accord. Without clear thinking and the use of suitable words the confusion which surrounds this subject will continue.

HYPERPIESIS.

The term "hyperpiesis" has been introduced by our veteran clinician, Sir T. Clifford Allbutt. Etymologically it means excessive pressure, and throws no light on the problem of how much is blood pressure and how much is arterial wall. If it carries with it the idea of fullness, the question at once arises of the relation of fullness to pressure. In measuring arterial pressure with the haemomanometer, the question remains, Are we measuring the pressure wave only, or are we not also measuring vessel wall?

HYPERTONUS.

The only other word I need refer to is "hypertonus." I am commonly regarded as having definitely applied it to an arterial condition. It means a contraction of the muscular

coat of arteries over and above the normal or average tonus. For many years, before the haemomanometer came into use, I had watched the occurrence of this over-tightening up of the arteries and the relaxation of the over-tightening. It is a clinical phenomenon which is as certainly present and is as easy of recognition as any phenomenon appreciable by the senses.

Arterio-sclerosis.

I must next ask your attention to the term "arterio-sclerosis." It was introduced almost as another word for "atheroma." The thickened radial arteries which are so commonly met with clinically are, however, only rarely atheromatous—the thickening is due to hypertrophy of the middle, that is the muscular, coat. This thickening may occur with hardly a trace of atheroma, and most of the arteries with a muscular coat may be so thickened. It is a very common condition.

The Haemomanometer.

The modified Riva-Rocci haemomanometers all have an armlet, which is usually applied to the upper arm. The bag encircling the arm has air pumped into it until the pressure has stopped the pulse wave, as indicated by the disappearance of the radial pulse at the wrist. The pressure in the bag is shown by a U-shaped mercurial manometer, or by a spirit manometer as introduced by Dr. George Oliver, or by a neat little mercurial manometer recently introduced by that ingenious physician. It does not really signify what manometer is used, for they are, of course, all carefully standardized, and either of the two latter is easily carried about. The armlet is practically the same in all.

The Claim.

The armlet when applied to the upper arm obliterates by pressure the lumen of the brachial artery. This artery when perfectly normal is so thin-walled that when empty it collapses by its own weight. In this condition of artery the pressure required to close the vessel corresponds with the blood pressure inside the vessel. This physiological fact was taken up by some distinguished physicians who maintained that, no matter what pathological changes might be present in the artery compressed, this instrument recorded blood pressure—that is, recorded the same pressure as would be recorded were a cannula inserted into the artery and attached to a manometer.

The Author's Position.

My contention has been and is that when the artery wall is thickened the thickening increases the resistance to compression, the resistance then becoming *blood pressure plus vessel wall.*

The difference between the thickness of the normal brachial artery, which, as I have said, collapses by its own weight when empty, and an artery thickened by sclerosis—that is, by muscular hypertrophy—is great. In addition, however, to the muscular thickening, the thickened muscular coat retains the power to contract and to relax. When it contracts the wall becomes still thicker, and the lumen becomes still smaller. Now I submit to your common judgement that, when you put the armlet over such a thickened vessel, you have not only to overcome the resistance of the blood pressure, but of the hypertonic vessel wall in addition. The phenomena have passed from the physiological to the pathological, and therefore to the clinical.

As it is true that the thick-walled vessel requires greater force to obliterate its lumen than the thin walled vessel requires, it follows that when the thick muscular coat contracts beyond its normal *tonus*, the vessel wall is further thickened, and the lumen is further diminished, so that still greater pressure is required to obliterate the lumen and to stop the pulse wave. The *hyper*-tonically contracted sclerosed artery is more resistant to pressure than the tonically contracted one.

Three Factors in Haemomanometer Observations.

It thus follows that in taking haemomanometer observations three factors of clinical importance have to be considered, namely, (1) blood pressure; (2) structural changes in the wall of the artery; (3) hypertonus of the muscular coat. Upon the correctness of your estimate of these separate factors will depend the correctness of your conclusions, and will determine the real value that this instrument will be in your clinical work. If you take its readings as only giving the first factor, namely, blood pressure, you will make the most appalling and disastrous mistakes, and I have known such to be made.

Recent Experimental Work.

I am aware that this subject can appear so clear to you, and my reasoning be so convincing, that further evidence may be regarded by you as unnecessary. But the fact remains that my contentions have not yet met with universal acceptance, and to help the conversion of our doubting friends I may tell you of some recent experimental work on the subject.

In the first place I shall refer to Dr. J. C. Janeway, of New York, who, I think, wrote the first book on blood pressure after the haemomanometer came into common use. He was a pure blood pressurist, and held that there was no evidence that the condition of the arterial wall affected haemomanometer readings, that the readings always meant blood pressure and nothing else.

He has recently taken up the question experimentally, in conjunction with Dr. E. A. Park, using arteries taken from freshly killed cattle for the purpose. It is interesting to find from the record of these experiments[1] that jointly they are satisfied that *hypertonus in normal arteries* may represent a pressure of 51 to 68.5 mm. of Hg. This is a large rise from the previous zero, and it is acknowledged that the effect of hypertonus had been overlooked—not of course by me, either clinically or pathologically! They say, "We must acknowledge that Russell has called attention to a hitherto *insufficiently recognized* influence of arterial contraction on our clinical readings." They would have been more correct had they said *totally unrecognized.* In the sentence immediately preceding this halting acknowledgement the statement is made that "it seems to us reasonably proved that Russell's contention that hypertonic contraction of the arteries and not high blood pressure is the cause of the high readings obtained with clinical instruments has no basis in fact." I am entitled to claim that when my work is criticized it should be presented accurately, and the sentence just quoted misrepresents my contentions, and indeed has "no basis in fact." My critics have not acquainted themselves with my work as they ought to have done, seeing my book was in their hands. They overlook the clinical and pathological fact upon which I based my contentions—namely, that the structural change present in the majority of the thickened arteries, recognized as such during life, was hypertrophy of the tunica media. I suggested that the term "arterio-sclerosis" should be confined to this condition, as it was the commonest form of thickening in radial arteries, and had no resemblance whatever to atheroma. It is clear that my critics have entirely failed to realize the significance of that contribution to clinical and pathological knowledge. They are entitled, perhaps, to confuse atheroma with other arterial thickenings, but they are not entitled to represent me as doing so. Having failed to note the significance of my pathological findings, they also failed to grasp the contention that arteries with such a thick muscular wall presented much greater resistance to compression by the armlet of the haemomanometer than normal arteries present. The further point they have also, as a consequence, missed—namely, that the hypertrophied tunica media retained its power of passing from tonus to hypertonus, and that hypertonus in such an artery leads to further thickening of the wall and to diminution in the size of the lumen, and consequently to still greater resistance to compression by the armlet. My critics have acknowledged that the hypertonus of a normal artery may give an increase of pressure of from 50 to 68 mm., but they will also find that when hypertonus is present in an artery with a hypertrophied muscular wall the resistance is greatly added to. I may mention that arteries with such walls as I describe will not be found in cattle; they must be sought for elsewhere.

My critics, however, have experimented not only with normal but with atheromatous and calcareous vessels, and speak of these changes as arterio-sclerosis. The use of the term "arterio-sclerosis" for all arterial thickenings and degenerations is deplorably inaccurate, and the matter under discussion will not be satisfactorily settled until totally different pathological processes cease to be called by the same name. Clinicians must accept the fact that

the thickened arteries, with which they so frequently meet, are not usually atheromatous, but are thickened as I have indicated and act as I have indicated. The atheromatous vessels used for the experiments were suspended in a glass cylinder, and the compressing medium was water introduced into the cylinder. It is shown that the water picks out the unaffected portions of such arteries, and compresses the artery at these points, and on this observation it is contended that *arterio-sclerosis* (which in the vessels used clearly means atheroma) has no effect in making the vessel more resisting to pressure. The observation so far as atheromatous arteries are concerned is correct, and is in harmony with our pathological knowledge of the scattered and patchy character of the lesions in atheroma, but a grave mistake is made in not allowing for the difference between the experimental method adopted and the clinical method. The observers might have seen, that, while a water-jacket would necessarily pick out and compress the smallest normal areas in the course of an atheromatous vessel, the armlet assuredly bridges over such areas unless they are extensive. No doubt the pressure exercised by the compressed muscle of the arm is spoken of as "fluid pressure," but to be led into experimental or clinical error by the use of this term, in a matter of this kind, is not reasonable. Muscle is not fluid in the sense in which water is fluid! The same method has been used by other experimenters, but Drs. Janeway and Park are the first to find that normal arteries when hypertonically contracted may add over 60 mm. to the pressure required to obliterate them. From this observation the authors of it must see that the conclusion is unavoidable, that the muscular thickening, to which I hold the term "arterio-sclerosis" ought to be confined, must add to the resistance to compression, and that when hypertonus is also added there is a great additional resistance offered to the air-bag.

I may state, what I have stated elsewhere, that in this condition the thickening is uniform and not patchy. It is, perhaps, also necessary to state that the hypertrophied muscle of an artery wall may lose its tonus, as the hypertrophied wall of a left ventricle may, and when it does so it relaxes, and resistance is then, of course, lowered. Thickness and tone of wall and size of lumen must always be considered together, if accurate understanding is to be reached.

In the BRITISH MEDICAL JOURNAL in 1908 I published observations made on a thickened brachial artery, obtained shortly after death, tested by means of an air-bag, and found that it indicated a pressure of something over 100 mm. Hg, and I do not think that this is the limit of resistance of the arterial wall.[3]

In July, 1911, Dr. Leonard Findlay published an interesting series of observations on brachial pressure, as compared with digital pressure at different ages.[2] The digital pressure was measured by Gaertner's tonometer. In early life there is little difference between them—that is to say, the blood pressure is much the same in the finger as in the brachial artery. As life advances, however, there appears a marked difference between the two, until between 40 and 50 years of age there may be a difference of 88 mm. Hg. In cases of Bright's disease this difference between brachial and digital artery pressure may reach 100 mm. Hg. He thinks the explanation is to be found in the arterial hypertonic contraction. He also experimented on cats with adrenalin and found that the *difference* between the carotid and the paw pressure rose from 50 to 140 after adrenalin injection. His explanation is that "the constricted arteries cut off the pressure wave," that the pressure wave is different in rigid and in elastic tubes, and that when "arteries are more or less sclerosed, or in acute Bright's disease where the arteries are tonically contracted, the elasticity of the vessel is diminished and more nearly approaches the character of a rigid tube."

Experimental work is thus confirming my clinical and pathological contentions.

Illustrative Cases.

I next ask your attention to three cases which illustrate how valuable and interesting haemomanometer observations are when properly interpreted.

CASE I.—*Cerebral Symptoms due to Hypertonic Contraction.* This patient was under my care in Ward 27 in September, 1910. The phenomena she then presented consisted of cerebral symptoms whenever the arterial pressure rose, as it could do, from 200 to 260 or 290 mm. I showed her to the post-graduates, and her case is recorded in the *Lancet* of December 3rd, 1910. I had lost sight of her, so that her being here now has been quite fortuitous so far as we are concerned. She has kept fairly well, but is threatened with a return of her symptoms, and whenever these threaten there is an associated rising of her brachial pressure. At present her pressure keeps about 200 mm., but as soon as it begins to rise she develops cerebral symptoms which are promptly removed by the administration of a vaso-dilator. If left alone the pressure can rise from 200 to about 300 mm., and we are asked to believe that this is the result of a variation in this woman's heart power. As a matter of fact, what happens is that her brachial artery becomes markedly hypertonically contracted, and it is this which gives the high reading; when the artery is relaxed by erythrol the reading rapidly falls to 200 again. It is this recurrence of hypertonic contraction which is this patient's danger. It is not any variation that the hypertonus may lead to in stimulating the left ventricle to increased effort that is the essence of the clinical phenomena. It is not a heart instability, it is a vessel instability; and, if we miss that, we miss the essential factor in the whole series of phenomena which the case can present; we fail to understand the case, and what we fail to interpret aright we cannot treat aright.

CASE II.—*Arterial Thickening due to Syphilis.* I next show you a man aged 40 who was admitted on account of severe and constant headache, and who had syphilis three years ago. His radial and brachial arteries were somewhat thickened, and his brachial pressure varied between 140 and 150 mm. The pulse wave was small and feeble; there was no heart enlargement discoverable by percussion; the heart impulse was feeble and the sounds were very faint, the first sound at the apex and over the right ventricle being barely recognizable. He was anaemic, with a red blood count of 2,560,000 and 46 per cent. of haemoglobin. He was put on large doses of potassium iodide. The headaches soon yielded to this treatment; at the same time the changes in his arteries and in the vigour of his circulation were of particular interest, for one does not often have the opportunity of following the changes as we had in this patient. When he had been taking the iodide for some time the arteries became quite perceptibly softer and larger, and along with this the pulse wave became larger and fuller, and the first sound of the heart came out clearly and definitely. These phenomena were as definite to my house-physicians as to me. With these marked changes in the circulatory phenomena there was, however, no change in the haemomanometer reading.

I have seen this kind of thing before, and the interesting clinical facts which are to be noted in such cases are: (1) That the hypertonic thickening of the vessel has yielded; (2) that the power of the left ventricle has been restored, and the pulse has become larger and stronger; and (3) that there has been no change in the haemomanometer reading. No one who still claims to know anything about the pulse as measured by the finger would for a moment doubt that there had been a marked increase in heart power in this patient. Such an increase was confirmed by the change in the character of the first sound and of the impulse. Yet there was no change in haemomanometer reading; and there ought to have been, did this instrument record blood pressure and blood pressure only.

From my standpoint, the explanation is that what was gained in heart power was balanced by the relaxation of the hypertonus. That is to say, if the blood pressure rose 60 mm. it was balanced by a loss in the resistance of the vessel wall of 60 mm.

Again you see how entirely misleading this instrument will be if you take it as the measure of heart power in your clinical work, and yet how interesting and valuable it is when you learn to interpret its records aright. I shall not detain you by showing you other cases; but I should like to tell you about a medical friend whom I saw a few days ago, as he illustrates another aspect of the subject we have been considering.

CASE III.—*Angina Pectoris Minor with Hypertonic Spasm.* A few months ago this friend consulted me about a recurring pain in the left chest over the precordia and posteriorly. It was difficult to be quite satisfied as to the meaning of this pain, for the heart was perfectly sound and the brachial pressure was only 125 mm.; the vessels were soft and the pulse regular and of good volume. He, moreover, was a strong cyclist, and his cycling did not make things worse, nor did it bring on the pain. With treatment he got relief for three months, but the pains had returned; they were more severe and very perturbing, as they came on at unexpected moments, and when they supervened he had to stop what he was doing. There was a suggestion of the pain going down the left arm. He was anxious that I should not think his symptoms merely fanciful. The pulse was 80 and the pressure 125 mm., the heart-sounds were clear and closed. After the examination we sat talking for some

time, when he told me that an attack was coming on. His colour did not change, but he leant forward, resting his elbows on his knees, and was evidently considerably distressed. I again felt his pulse and found it distinctly smaller, and instead of beating 80 it was only beating 60. I asked him to take his coat off, and on taking his pressure found it had risen from 125 mm. to 145 mm.

This observation, to my mind, at once settled the question of diagnosis. This was a true angina pectoris minor, a condition I described years ago. My interpretation of the phenomena is that the state of the vessels, as revealed to the finger, and shown by the rise in the haemomanometer pressure from 125 to 145 mm., indicated that a hypertonic spasm had taken place; that this increased the pressure in the aorta, and thereby perturbed the heart, which, instead of being accelerated, was slowed down from 80 to 60 beats per minute. To speak of this as a neurosis almost always suggests that the symptoms are either fanciful or that the condition is mainly determined by a mental and central influence; and no men more warmly resent this view when applied to themselves than medical men do. Personally I interpret the phenomena as being determined by peripheral conditions and not by central ones. To me this is a vessel irritability, and its successful treatment lies in the removal of the cause keeping up that irritability. In this particular case the cause was probably tobacco.

Again I point out to you that the variation in haemomanometer reading was due to change in the vessel wall (the brachial artery); a mere increase of heart power represented by 20 mm. would not give rise to such symptoms. My patient could, I doubt not, stimulate his heart by cycling above that and without discomfort, but the moment a general angiospasm occurs the symptoms appear. It is always a question whether or no the coronary arteries participate in the spasm, but the practical fact is that if you counteract the general angiospasm the symptoms disappear. Your patient is cured when you have removed the tendency to this hypertonic spasm. The foundation fact is the vessel spasm, for the moment you relieve that the symptoms disappear; the spasm affects the brachial as well as the smaller arteries, and, I repeat, the haemomanometer gives you the record of it, when the vessels are normal as well as when they are sclerosed.

There are always the three factors to keep in mind—namely, blood pressure, structural change in the vessel, and hypertonus. There is no escape from the exercise of discretion and judgement when using this instrument, and those are the points; the significance and value of each have to be determined in every individual case. The instrument has opened no *royal road* to the determination of the all-important question of heart power, as we are called upon to judge of it clinically.

REFERENCES.

[1] Janeway and Park, *Arch. of Int. Med.*, November, 1910, vol. vi, p. 586. [2] Leonard Findlay, *Quarterly Journ. of Med.*, vol. iv, No. 16, July, 1911. [3] W. Russell, BRITISH MEDICAL JOURNAL, 1908, vol. ii, p. 1076. *Arterial Hypertonus, Sclerosis, and Blood Pressure* (Green and Sons).

UNDER the will of the late Mr. Alfred Bell of Newcastle, who died on November 25th last, the Royal Victoria Infirmary, Newcastle, and the Hull Royal Infirmary each receive a sum of £2,000, and Ingham Infirmary, South Shields, one of £1,000.

THE Yellow Fever Bureau *Bulletin* for January, 1912, contains a reprint of an interesting report on the yellow fever in Mérida by Dr. Mario G. Lebredo, Director of the Duque Laboratory of Investigations, Havana. After careful and prolonged study, Dr. Lebredo has come to the conclusion that there is an endemic focus of yellow fever in the Gulf of Mexico, that Mérida is to be considered as a seriously infected locality, and that because of the close contact, the lack of effective defences, and the short time since the last outbreak, Campeche is to be considered as suspicious. He believes also that persons coming from Quintana Roo should be watched by the Mexican sanitary authorities, who, by a careful study of the fevers affecting soldiers, might gain some insight into the histories of the past epidemics occurring at Mérida and Campeche. He recommends that Vera Cruz, and other ports in the Gulf where cases may arrive in the infective state, should establish a sanitary organization to observe and study all suspicious cases in order finally to determine the best methods for the complete and final eradication of the disease.

SERUM AND VACCINE THERAPY IN CONNEXION WITH DISEASES OF THE EYE.

THE MIDDLEMORE PRIZE ESSAY, BRITISH MEDICAL ASSOCIATION, 1911.

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(*Continued from page 592.*)

II.

DISEASES OF THE EYE DUE TO PYOGENIC ORGANISMS.

IN treating tuberculosis by vaccine, it is necessary to use a "stock" vaccine, whereas, in dealing with other infections, in most cases it is possible to prepare a specific vaccine from cultures of the infecting organism obtained from the patients to be treated. It is advisable to use a specific vaccine in most cases, but it seems to be unnecessary in cases of infection by staphylococcus. Here a mixed stock vaccine, prepared from cultures of *Staphylococcus aureus, citreus*, and *albus*, is usually efficient; if the use of such a vaccine is not attended by improvement in a reasonable time, a specific vaccine should be prepared. Again, in disease due to gonococcus, owing to the difficulty of preparing a vaccine, stock vaccine must usually be used, and gives quite satisfactory results.

Polyvalent stock vaccines have been used in infections due to pneumococci and streptococci, but the best results are obtained by the use of specific vaccines, as there are many different strains of these organisms.

In taking cultures from eye diseases for the purpose of preparing vaccines, it is advisable in most cases to use as culture media serum or blood agar, as many of the bacteria which commonly affect the eye grow well only on these media.

The vaccine is prepared by making an emulsion, by shaking, of the bacteria in 0.85 per cent. sodium chloride solution, and standardizing by mixing a portion of the emulsion with a portion of blood (which normally contains 5,000 million of red cells to the cubic centimetre), and counting fields of bacteria and red cells on a microscopic slide. In this way the number of bacteria per cubic centimetre is estimated. The emulsion is then sterilized at a temperature of 58° C. for thirty minutes, and finally diluted to a convenient strength in 0.5 per cent. phenol.

I will now deal with the vaccine treatment of the various regions which come within the province of eye surgery.

External Infections.

1. The lacrymal sac.

The lacrymal sac is liable to acute and chronic inflammations. The acute inflammations are usually due to streptococci, and, as stock vaccines are unreliable, there is not time, as a rule, for vaccine treatment. I have treated acute lacrymal abscesses with stock streptococcus vaccine, combined with ordinary surgical treatment, but have not been satisfied that the vaccine influenced the course of the disease.

The most important variety of chronic inflammation is that due to infection by pneumococcus. The chief dangers of this disease are—first, that abrasions of the cornea may become infected and severe ulcers be produced; and, secondly, that any operation carried out on an eye with such infection of the sac is attended with grave risk of sepsis. The region of the lacrymal sac is well supplied with blood, and infections react well to vaccine treatment.

Very Chronic Inflammation of the Lacrymal Sac Cured by a Specific Pneumococcus Vaccine.

W. T., aged 66. Right eye amblyopic. Attended first November, 1905, with left cataract and suppurating lacrymal sac. The sac was washed through regularly without relief, so in August, 1907, the sac was extirpated, leaving, however, a sinus. Ordinary treatment by scrapings and antiseptics did not affect the condition, cultures of pneumococcus being obtained in February and April, 1908, making operation for the left cataract impossible. Treatment by a vaccine prepared from the pneumococcus cultures was carried out from May 2nd to August 3rd. The opsonic index was regularly taken and an inoculation given every ten days, commencing with 10 million and gradually increasing to 50 million. After the latter dose, however, a negative phase was produced, followed, however, by

a rise of the index to 1.76 on June 9th. From June 12th until August 3rd 30 million were given every ten days. Cultivations on serum agar taken on July 6th and August 3rd gave no growth of pneumococcus, so on August 7th a left preliminary iridectomy was performed, followed by cataract extraction on October 6th, with no unfavourable symptoms after either operation. In December vision with glasses = $\frac{6}{9}$.

In this case, then, pneumococcus infection of more than two years' duration was cured in two months by vaccine, enabling operation to be performed without risk.

Chronic inflammations of the lacrymal sac offer a hopeful field for treatment by vaccines. Next in frequency to pneumococcus comes staphylococcus as infecting organism, and such cases can be treated with success by doses of 100 to 500 million of stock vaccine repeated once a week: R. W. Allen[1] has treated successfully cases of dacryocystitis due to streptococcus by means of vaccines.

Diseases of the Lids.

Staphylococcus.—Staphylococcus aureus is the cause of many varieties of chronic or recurrent disease of the lids, and such disease can be cured by vaccine in doses of 100 to 1,000 million. Blepharitis is due to such infection, and is usually associated with an error of refraction. Cases may be cured by means of staphylococcus vaccine, and if the refractive error be corrected there is no tendency to relapse.

A. B. for twelve months suffered from blepharitis, which did not improve under ordinary treatment, though his hypermetropia (+3 D.) had been carefully corrected. Cultures showed *Staphylococcus aureus* to be the causative organism. For two months the patient was treated with stock vaccine, an inoculation being given every ten days, commencing with 100 million, gradually increased to 250 million. A month later the lids were practically normal, only very slight thickening of the lid margins being present.

Chalazions and hordeola show great tendency to recur frequently in some patients; cure can be obtained by a three months' course of treatment by staphylococcus vaccine.

Mayou[3] has given the results of treatment by vaccine in infections due to staphylococci. He used doses varying from 500 to 2,000 million, regulated in most cases by the opsonic index. He reports four cases of acute sties associated with phlyctenules and corneal ulcers, in one of which a complete cure was obtained; in the other three there was temporary relief, followed by recurrence. A case with boils and sties on lids of one month's duration was given two doses, 500 million and 1,000 million, and was cured in a month. No recurrence six months later. He quotes also cases of sties and recurrent tarsal cysts cured by one inoculation.

Doyne[2] has described a variety of recurrent and obstinate conjunctivitis due to infection of the Meibomian glands with staphylococcus, and he reported a case cured by vaccine. The patient had for many months suffered from attacks of conjunctivitis every week or ten days. Staphylococcus was grown from secretion expressed from Meibomian glands, and a specific vaccine prepared. Treatment was carried on for three months, and no fresh attack occurred. Later there was a relapse, so treatment was resumed for a short time. Four months later he had had no further attacks.

Conjunctivitis.

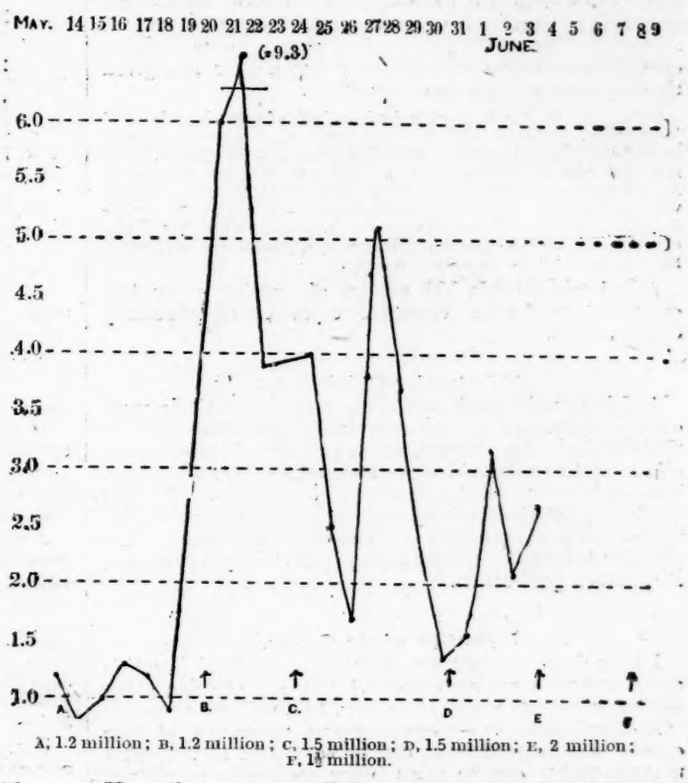
Many varieties of acute conjunctivitis clear up so rapidly with antiseptics that there is no indication for further treatment. Allen,[1] however, recommends the use of vaccines in the treatment of conjunctivitis due to pneumococcus, streptococcus, *Bacillus coli*, and *Bacillus pyocyaneus*.

Acute gonococcal conjunctivitis is a disease of grave prognosis, and here vaccine is of great value. Of two severe cases which I have treated, in one a cure was obtained in ten days, in the other no apparent benefit resulted.

W. H., a middle-aged man; no history of infection; attended May 13th, 1908, the right eye having been bad four days. Much discharge and chemosis; cornea, ditch ulcer inner side, ring of disturbed epithelium all round rest of cornea at periphery, and greyish lines of infiltration at central parts. Vision less than $\frac{6}{36}$; tension full. Smears and cultures of gonococci obtained.

May 14th: Right eye, cornea more infiltrated. Left eye infected, chemosis and discharge, yellow ulcer all round cornea, and three infiltrated spots more centrally placed. May 15th: Right eye better. Left eye, ulcer larger, cornea infiltrated. May 16th: Right eye, corneal ulcer healed. Left eye, less chemosis. May 22nd: Left corneal ulcer healed. May 23rd: No discharge from either eye—still slight conjunctival injection. May 31st: Both eyes perfectly quiet. June 9th: Vision in each eye normal. Depressed scars round both corneae.

The details of vaccine inoculations and opsonic indices are shown in chart form.



A, 1.2 million; B, 1.2 million; C, 1.5 million; D, 1.5 million; E, 2 million; F, 1½ million.

Here, then, very small doses of vaccine were followed by a most excellent clinical result. During the treatment frequent irrigation of the conjunctival sacs with antiseptics was carried out, and eserine was used with the object of increasing the blood supply of the cornea.

A boy, aged 12, on admission had acute gonococcal conjunctivitis of two days' duration, and the cornea was steamy. A large ulcer appeared at the centre of the cornea, and perforated; the iris prolapsed and vision was lost. Three doses of 1 million each and three of 1½ million each of gonococcus vaccine were given. Vaccination appeared to have no good effect in this case.

I have treated three cases of gonococcal ophthalmia in new-born infants with doses of ½ to 1 million of vaccine; the disease became cured in each case without infection of the cornea.

Rubbrecht[4] reports a case of systemic gonorrhoea with conjunctivitis and keratitis in which three doses of gonococcus vaccine (5, 7½, and 10 million) were given with excellent results. There was no corneal ulceration, but when the conjunctivitis was well three attacks of peripheral keratitis occurred, extending over a period of one month. Weeks[5] recommends doses of 2½ to 50 million of polyvalent gonococcus vaccine, but has found it of little value in acute infections. I think he has used too large doses and has produced negative phases, from which there is not time for recovery in acute cases. McKee has treated with vaccine 3 cases of metastatic gonococcal inflammation of the conjunctiva with success.

We see, then, that in acute gonococcal conjunctivitis, if the treatment be commenced before the internal parts of the eye are affected, good results may be obtained with vaccine, but it is necessary to use very small doses repeated at short intervals, the object being to avoid as far as possible negative phases, and to obtain only rapid and repeated positive phases. Every effort must be made to increase the blood supply of the cornea and to wash away discharge frequently. Free discharge is to be looked on as

useful, as it is by this means that opsonins are brought through the diseased tissues.

Chronic Conjunctivitis.

Of the more chronic forms of conjunctivitis, Parinaud's conjunctivitis, according to Sinclair and Sherman,[6] is probably due to *Staphylococcus albus*. I have treated one case with staphylococcus vaccine for some weeks, but was unable to make out any good effect from the treatment.

Cases of conjunctivitis due to the diplobacillus of Morax, and others due to Friedländer's bacillus, have been benefited by vaccine treatment. It is difficult to prepare a vaccine from the diplobacillus owing to its delicate growth; cultivation on peritonitic serum agar has given the best results in my own experience.

CASE.—A. C. for ten years had suffered from chronic conjunctivitis. In June, 1908, the conjunctiva gave pure cultures of Morax's diplobacillus, from which a vaccine was made. For five months treatment was carried on, commencing with 10 million and increasing to 50 million, with benefit. There was marked improvement for ten days after each dose, and at the end of treatment the eyes were healthy, except for slight crusting at the outer canthi. Clinical symptoms were sufficient for regulating the dosage in this case.

Allen[1] recommends 100 million of vaccine every two or three weeks in obstinate cases of diplobacillary conjunctivitis.

Phlyctenular Ophthalmia.

As I have mentioned, in dealing with tuberculosis, most cases of phlyctenular conjunctivitis would seem to be of tuberculous origin, although frequently *Staphylococcus albus* can be cultivated from the conjunctival discharge, but should be regarded as a secondary infection. Mackay[5] has used staphylococcus vaccine for phlyctenular conjunctivitis. Reporting a case of phlyctenular keratitis and pustular episcleritis of long standing and many recurrences he claims a good result.

Ulceration of the Cornea.

I have dealt with the treatment of gonococcal keratitis associated with conjunctivitis. I will now mention other corneal infections which have been treated by vaccines.

1. *Staphylococcus.*—Staphylococcal ulceration of the cornea is a severe disease, but by no means so severe as the ulceration due to some other organisms mentioned later. Vaccine treatment has given good results. The bacteriological diagnosis must first be made by taking scrapings from the growing margin of the ulcer and planting on serum or blood agar; if staphylococcus only grows we know that it is the primary infection, and not merely an added infection secondary to some more virulent organism.

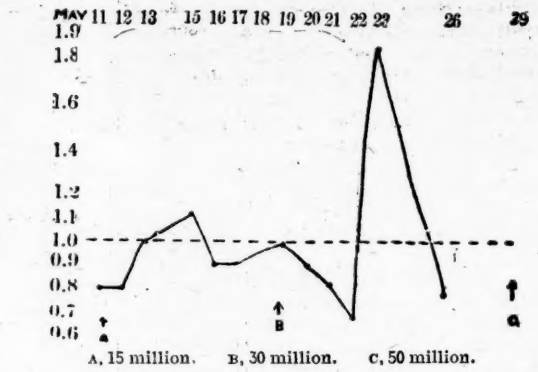
Grey Edwards[7] reports three cases of hypopyon ulcer treated by staphylococcus vaccine. The first, an acute case, rapidly recovered after one dose of 250 million; the second, a chronic ulcer, recovered after one injection of 100 million; the third case, also a chronic hypopyon ulcer, after three injections, likewise recovered. In all three cases treatment by subconjunctival injection of mercury bicyanide was carried out.

Mayou[3] mentions a case of neuroparalytic keratitis with a hypopyon staphylococcus ulcer, which was cured three months after receiving an injection of 500 million of staphylococcus vaccine.

The most severe forms of ulceration of the cornea are those due to pneumococcus and streptococcus.

2. *Pneumococcus.*—Acute ulcer of the cornea due to pneumococcus is the commonest form of "hypopyon ulcer," and is usually associated with similar infection of the lacrymal sac. Treatment by vaccines has been followed by a fair measure of success, but it is necessary to begin the treatment early, as the disease usually progresses rapidly. Immediately the diagnosis is made 25 millions of polyvalent stock pneumococcus vaccine should be given; cultures of the patient's own organisms should be planted, and a specific vaccine made as rapidly as possible. Twenty million of this is a suitable dose to commence with, but may be increased in four or five days, the treatment being regulated by estimations of the opsonic index and clinical appearances. The following case, an example of so-called "ulcus serpens," shows the good effect that may be obtained by the use of vaccine.

S. I., aged 64, attended May 11th, 1908, with pain in the right eye of four days' duration following a slight injury. Eyes "watery" for years. Right eye showed deep and superficial conjunctival injection, chemosis, and a small hypopyon. Tension full. Lacrymal regurgitation of muco-pus. Near the margin of cornea was a grey infiltrated ulcer, and the whole cornea was steamy. Scrapings from the ulcer showed pneumococci.



A, 15 million. B, 30 million. C, 50 million.

The case was treated with a stock pneumococcus vaccine, as shown in the chart, the opsonic index being frequently taken. The condition rapidly improved; on May 12th the hypopyon had disappeared, on the 20th the ulcer had healed, and on the 22nd the eye was quiet. The discharge from the lacrymal sac became clear.

It will be seen that the first dose slightly raised the opsonic index, and that the increased dose of May 18th gave a negative phase, followed by a high positive phase. During the negative phase for one day the eye was more inflamed.

Another case treated with the same stock vaccine gave no good result, but it was from the beginning much more unfavourable.

T. I., aged 77; eye had been bad for four days following an injury. On admission one-third of the cornea was occupied by a sloughing ulcer. Large hypopyon. Cultivations of pneumococci obtained. The whole cornea sloughed and perforated six days after admission, and the iris prolapsed. On the day after admission 25 million of stock pneumococcus vaccine were given.

Two other varieties of pneumococcus infection of the cornea are described:

A. *The Hypopyon Keratitis of Children.*—Stephenson[8] has found pneumococci in four out of seven cases as a mild infection commencing in an ulcerated phlyctenule. In these cases my own results would show that tuberculosis is nearly always the primary cause, though staphylococci and pneumococci are sometimes present as an added infection. In such cases treatment by tuberculin gives good results.

B. *Keratomalacia*, a form of gangrene affecting the cornea in children enfeebled by wasting disease. The outlook for vaccine treatment in such cases is unfavourable.

3. *Streptococcus* is the cause of a very virulent form of hypopyon ulcer. The following case illustrates the rapid course of the disease:

S. S., aged 63, having had chronic conjunctivitis for six months, came to hospital with history of acute pain in the left eye for three days; no injury. Condition on July 27th, 1908: Muco-purulent discharge, much chemosis, superficial and deep injection. Deep ulcer 3 mm. in diameter at centre of cornea, with sloughing base. Large hypopyon. Streptococcus was grown. Condition rapidly became worse, the whole cornea sloughed and perforated, and the eye was excised on August 10th. In this case, on admission 5 million stock pneumococcus vaccine was given; next day 5 million polyvalent streptococcus vaccine; four days later 10 million of a specific vaccine prepared from the culture obtained on admission; five days later 20 million of the same specific vaccine.

A variety of acute streptococcal infection is the pseudomembranous ophthalmia of infants. Toxaemia is intense, and death is the usual result. Vaccine in small doses should be tried in such cases, but I know of no recorded results.

De Schweinitz[14] reports the recovery of a hypopyon ulcer. A vacine was prepared from cultures of streptococcus obtained from the anterior chamber, and three doses (50 million, 100 million, and 100 million) were given. We see, then, that few cases are on record of acute pneumococcus and streptococcus ulcers cured by vaccine. I

believe these cases are so acute that they offer a more hopeful field for the use of serums than vaccines. With serum treatment many good results have been recorded. Ulcers of the cornea may be due to other organisms—*Bacillus coli*, diplobacillus, etc.—but I can find no records of such cases treated by means of vaccines.

As an accessory to vaccine treatment, the local light treatment by cadmium-zinc lamp, described by Hertel,[9] is valuable. He claims that the treatment causes (i) direct bactericidal action; (ii) indirect effects—conjunctival and ciliary injection, oedema, and cellular infiltration of the cornea.

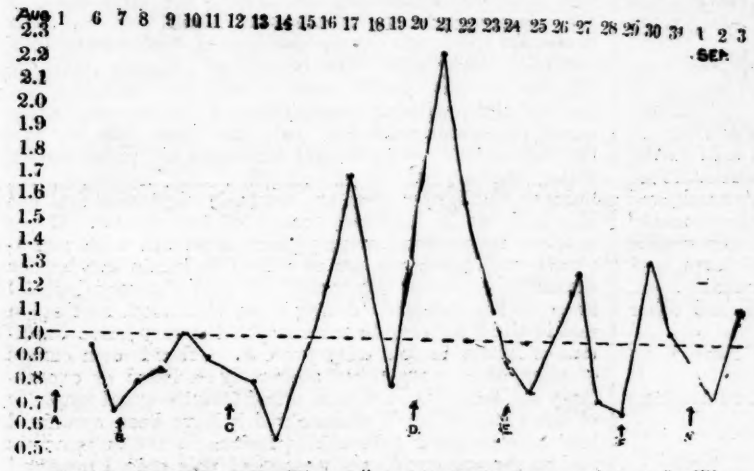


Chart 7.—Case E. P. A, 10 million of "stock" streptococcus vaccine. B, 5 million of specific vaccine; C, 15 million ditto; D, 10 million ditto; E, 12 million ditto; F, 15 million ditto; G, 20 million ditto.

Here, then, we have a means for producing (1) increased passage of serum to the diseased part, (2) increased local leucocytosis, (3) autoinoculation. If we raise the opsonic index by vaccines, such treatment should give even better results than in the hands of Hertel using the light alone (25 cures out of 47 cases of serpent ulcer of the cornea).

Post-operative Infection.

In post-operative infection excellent results have been obtained with vaccines. Cultures must be taken from the wound, and a vaccine used as early as possible. Staphylococci, streptococci, and pneumococci are the commonest infecting organisms.

Staphylococcus.—Maddox[10] reports an infected case of cataract extraction, with pus along line of incision; vitreous grey and turbid, and iris "rotten-looking." Injection of staphylococcus vaccine gave rapid improvement, followed by cure.

Streptococcus.—I have obtained a very striking result by vaccine in a case of late post-operative infection by streptococcus.

E. P., July 13th, 1908: Lids healthy. Right preliminary iridectomy performed. July 19th: Much ciliary injection. The inflammation became rapidly worse, with intense chemosis, the edges of the incision oedematous, iris discoloured, and a hypopyon developed. Cultures from wound showed pure growth of streptococcus. July 22nd: Increased ciliary injection and hypopyon. July 23rd: Less chemosis. July 24th: Hypopyon disappeared, injection and chemosis less. July 29th: Aqueous clear.

August 8th. A small hypopyon reappeared, lasting until August 14th. The inflammation gradually subsided, and the eye became quiet by August 23rd. Extraction and needling were performed later, without complication, and vision $\frac{6}{9}$ was obtained.

I give the details of treatment and opsonic indices in the above chart.

We see, then, that vaccine treatment is of great value in post-operative infections, the prognosis of which has been so bad in the past.

Internal Infections.

In internal disease of the eye due to pyogenic organisms the obtaining of a bacteriological diagnosis is difficult. The disease may be primary or secondary to a focus elsewhere in the body. Lesions of the eye secondary to disease of other parts have been described by Holmes Spicer,[11] and may take the form of irido-cyclitis, retinal abscess, or retinal phlebitis. Such cases may be secondary to skin abscesses, puerperal infections, pleuropneumonia, etc., and the causative organisms are usually staphylococci or streptococci. Another variety of metastatic infection is irido-cyclitis secondary to pyorrhoea alveolaris (Adams[12]), where staphylococcus or pneumococcus is the infecting agent. In all such cases vaccines can be used with good hope of success, cultures being obtained from the primary focus of disease.

On the other hand, in internal infections of the eye without obvious lesions elsewhere the difficulty arises of obtaining cultures of the causative organism and making a bacteriological diagnosis.

However, in cases of irido-cyclitis cultures have been made from the aqueous after paracentesis by Mayou,[3] and he reports a case in which *Staphylococcus albus* was grown, and the irido-cyclitis cured by vaccine, using doses of 1,000 million. Two other similar cases of irido-cyclitis treated by staphylococcus vaccine are recorded by the same author, one being cured, the other relieved. Weeks[13] records two cases of gonococcal iritis treated by stock vaccine with success, and he mentions two similar cases treated by C. A. Oliver, and one, recorded by Posey, of severe gonococcal uveitis which improved. Streptococcus has been cultivated by other workers from the anterior chamber in cases of irido-cyclitis.

The general rule must be laid down that larger doses of vaccine are necessary in internal diseases of the eye owing to the peculiarities of its blood supply.

Lastly, mention may be made of a result obtained by Trantes,[15] who used cow-pox vaccine in a case of trachoma with resulting cure; the experiment was suggested by the observation of a case of trachoma which became well after an attack of small-pox.

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A CASE OF ADDISON'S DISEASE TREATED WITH TUBERCULIN.*

BY

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A WELL-EDUCATED and intelligent lady, aged 34, unmarried, consulted me in April, 1907, under the following circumstances.

Two years earlier, when in good health and having had no serious illness, she began to ail and has got gradually worse. She complained of lassitude and want of strength, whereas she was formerly fond of getting about and of occupation; said she had no appetite, but forced herself to eat. She had frequent headaches and suffered from constipation, varied during the last six months by a few attacks of diarrhoea; also had backaches (lumbar), which have been more frequent since last winter. She suffers from post-nasal catarrh, and the throat is sometimes sore, but she has no cough. Used to sing much, but has gradually discontinued it during the last two years; formerly could cycle 20 miles, but gave this up last summer. The hands and legs had been

* A paper read at Bath, April 28th, 1909, at the meeting of the Bath and Bristol Branch of the British Medical Association. Postscript added May 1st, 1911, and March 7th, 1912.

shaky for about two years, and the temper was getting irritable. She complained much of nausea, without vomiting, dating from six months back. It came on at any time and was not related to food. Sometimes when walking there was a feeling of unreality, and a sensation as if she would stagger at any moment. She fainted a few mornings since for the first time. Latterly there had been much mental depression. A month ago she first noticed a mottled brown appearance of the skin on the thighs, and later herself and friends had remarked it round the mouth and in other spots. There had been a dull pain, not always present, between the clavicle and the right breast, since last winter only. For many years the right knee had been painful after exercise.

It will be noticed that some of these symptoms were quite recent, and all except the last appeared since two years before. At that time a younger sister, to whom she was much attached, died at Mentone of phthisis after ten years' illness. The patient nursed her a good deal during the earlier part of the time, and went out to Mentone to be with her just before the end. Felt the shock very much, and dates her own illness from that event. Eighteen months ago she consulted a doctor, who said that her organs were quite sound, that she had nervous breakdown, and advised her going abroad. This was not practicable, and she got worse instead of better; has tried iron and other tonics without effect.

With the exception of the sister who died there is no immediate family history of tuberculosis. Her father is English, her mother a native of Guernsey; two brothers and one sister are alive, all in fair health.

Condition when First Seen.

On examination the patient is a tall, well nourished, somewhat sallow brunette, of naturally alert temperament. The pulse varies from 76 to 84, is feeble, and occasionally a little irregular. The tongue is furred at the back; there is little or no tremor. She is of abstemious habit.

The throat, although patchy and not quite healthy in appearance, shows no marked abnormality. No physical signs of disease were elicited by the usual examination of the thoracic and abdominal viscera, and examination per vaginam, digital and specular, also gave negative results. Menstruation began at 14, was regular until a year back, lasting five days, but since then the intervals are fourteen days only. The urine is normal in quantity and colour, acid, specific gravity 1020, no albumen or glucose, slight cloud of mucus, no bacterial turbidity. Ocular, plantar, and tendon reflexes are normal.

There is a decided fine tremor of hands and legs, but no tenderness. No enlargement of thyroid, or thrill, or exophthalmos. There is an enlarged and prominent node at the junction of the second rib and cartilage on the right side, very slightly tender; this is the seat of the pain referred to, and is believed by the patient to be recent. The body is well nourished, weight 9 st. 2½ lb., muscles remarkably firm in contrast with the feebleness complained of. Hand grips decidedly feeble—subsequently measured by consultant as one-third normal. The right leg is 1½ in. shorter than the left, measuring from the anterior superior iliac spine to the external malleolus; the shortening is between hip and knee, and on inspection the pelvis is tilted to the right; movements of the knee and hip joints are perfect, but the ache experienced in the right knee after exercise was felt also after the examination.

An abnormal body odour which used not to exist is now, at times, perceptible to others. The recent brown pigmentation of the skin is most noticeable in irregular patches on the chin, lower and upper lips, sides of nose and forehead (very recent there), upper and inner parts of thighs, on buttocks round anus, on neck, forearms, and shoulder (ring round exposed portion); it is traceable on mucous surfaces of mouth, conjunctivae, and genitals, and on palmar as well as dorsal aspect of hands. It appears to be diffuse or general, but deeper in places, and is noticeably interrupted on thighs, backs of knees, and some other parts by oval and irregular patches of leucoderma. Although the patient is a brunette, she is confident that until recently the normal tint of her skin was nearer that of the light patches than the rest.

A blood examination showed over 100 per cent. haemoglobin, erythrocytes normal in number and shape, polynuclear leucocytes 4,200, no abnormal cells. The opsonic index to human tubercle, carefully determined in my own laboratory, was 0.80, two days later 1.00, but heated serum index (thermo-stabile opsonin) was 0.40. The slight variation from normal in the total opsonin index can hardly be called significant, but the thermo-stabile opsonin index is. A heated serum index of 0.0 is quite consistent with tuberculosis, but I have never found a high one—anything like as high as 0.40—in a case that was not undoubtedly tuberculous or highly suspicious. The post-nasal mucus was free from tubercle bacilli; and this I have found to be the case in several cases of post-nasal catarrh which I have treated with tuberculin with marked benefit.

Although I embarked on this case with a strong disposition to look for latent or early phthisis, the clinical picture and history as above disclosed did not seem as a whole explicable by any diagnosis but that of Addison's disease, of tuberculous origin, with the most objective symptom—pigmentation—quite recent, and with possibly tuberculous foci outside the suprarenals also. We have the initial mental shock, the tuberculous contact, the slow progressive character of the early stage, the myasthenia without muscular atrophy, nausea without ascertainable cause, occasional diarrhoea, fine tremor, signs of feeble circulation, progressive debility, languor and depression, the absence of any other organic disease to account for this group of symptoms, and, finally, the later onset of the pigmentation to clinch the whole. If we look upon this last as simply patches of leucoderma in a naturally dark skin, with heaped-up pigment near the margins of the cleared areas to give the darker effects, we are left without explanation of the accompanying group of symptoms. The patient's own evidence and the occurrence of mucous and palmar pigmentation stamp the deposit as pathological; and, moreover, the hairs on the lighter areas are normally pigmented and not bleached, as in ordinary cases of leucoderma. If we suppose tuberculosis with pigmentation but with suprarenals unaffected, we are at a loss to locate the lesions beyond the node of the second rib and the very doubtful knee or hip symptom dating from childhood, and again find in them nothing to account for the very grave condition of illness undoubtedly present. Other known causes of pigmentation are either absolutely excluded or exceedingly unlikely. On the known fact that the great majority of cases of Addison's disease which have been examined *post mortem* show tuberculous lesions in the suprarenals and on the apparently early stage of this case, I proposed to try tuberculin treatment supplemented by suprarenal extract. On April 12th I took the patient to Dr. H. D. Rolleston for an opinion, and he could suggest no alternative diagnosis and endorsed the treatment with suprarenal extract. He drew my attention to notes of many cases of tuberculosis with pigmentation, and also to the recognition by French physicians of a condition described as "Addisonism"—that is, a clinical picture agreeing with Addison's disease, but with symptoms mild in degree, and lacking the *post-mortem* confirmation of suprarenal lesion, therefore presumably differing only in degree, and possibly offering a less unfavourable prognosis. We cheered the patient with this and with the fact that the arterial pressure as taken by Dr. Rolleston was 120 mm. mercury. As regards tuberculin, he agreed that I might try it, and I saw Sir A. Wright the same afternoon; he strongly recommended me to try tuberculin, and also pointed out two or three cases of obvious tuberculous lesions with pigmentation amongst his out-patient records.

As regards blood pressure, my Riva-Rocci gauge was at the instrument-makers at this time, but soon after and many times since I found the pressure to vary little, 110 to 115 mm. on the first four occasions and much the same since; 103 was recorded on two occasions each after a few weeks' absence from treatment; 118 also twice, first in June, 1908, and again in September, about which time the most marked improvement set in. Since certainly in some fatal cases of suprarenal disease the blood pressure does not fall markedly until within a short time of death, the absence of an abnormally low pressure in this case does not tell against the diagnosis.

The patient was left in Bath under my care, and has been under treatment for two years (April, 1909) with three intervals of a few weeks spent at her home. On April 13th, 1907, the first injection of $\frac{1}{100}$ mg. T.R. human was given, the opsonic index being 1.05. Next day patient felt worse, the pain in the rib had increased, and there was a little diarrhoea. Thirty-two hours after injection the opsonic index rose to 1.48. Such a response, provided it is based on careful uniform determinations in one's own laboratory, has been in my experience, which on this point is entirely confirmatory of Sir A. Wright's, of great value in confirming the existence of a bacterial infection, and, in hopeful cases, of foreshadowing improvement. Several scores of indices have been subsequently taken in this case for the sake of research and in the hope of controlling the inoculations, but they may be disposed of by saying that the index was very rarely above normal or below 0.8, and that after a short time it was noticed that the patient's serum acquired the power of agglutinating the erythrocytes of the emulsion used (generally mine and my assistants's). This phenomenon, which cannot fail to strike the eye of the operator by the curdled appearance of the mixture of corpuscles, bacterial emulsion and serum in the pipette, sometimes before, sometimes after the fifteen minutes' incubation, interferes markedly with the accuracy of

the index determinations (see Fleming's paper in *Practitioner* May, 1908). My patient's serum would retain this property for months in succession and then lose it.

The pain in the rib ceased on the second day after the first inoculation, and returned only at rare intervals and in a very transient manner. On the ninth day the nausea was reported as almost nil, occurring only once or twice in a slight degree. The asthenia and depression was still very marked on the fourth day, but on the ninth the notes read, "On the whole, decidedly better." The effects, if any, of a first injection of bacterial vaccine being very important to observe, administration of suprarenal extract was deferred until the above notes were recorded. Fifteen grains daily were then given for a period of three months, and as the tuberculin injections were at first at intervals of ten days or more, it was fairly easy to form a judgement as to their relative effects. At first the suprarenal extract was thought to have some influence in preventing the return of nausea, but at the end of three months, no noticeable result appearing attributable to this remedy, it was discontinued.

The dose of tuberculin was after a time increased to $\frac{1}{1000}$ mg., and this was eventually given weekly for several months. During the first year, at any rate, almost every injection produced some malaise for twenty-four hours; afterwards this effect passed off, and larger doses given at intervals of four days were tolerated well with good results, whilst for the last two months doses up to $\frac{1}{500}$ mg. have been given every fourth and lately every second day. Slow but sure progress was apparent from the first, and this was sufficient to ensure the patient's return to Bath after two or three home visits of a month each, during which the improvement was scarcely maintained. The asthenic symptoms, and rarely nausea, were still complained of, but about six months ago much more rapid improvement set in, the patient began to say she felt more like her old self, and contemporaneously with this it became apparent that the patches of leucoderma were getting larger and running together, and that fresh areas of clearance were presenting. A photograph was secured last September, and another was taken last week. On comparing them this point will be easily recognized.

The present condition (April, 1909) is that the pain in rib, after becoming less and less frequent, has not been felt for three months; the knee still aches after walking, but long walks are taken without fatigue; the hand grips are normal; there are no attacks of nausea or diarrhoea; the mental depression has within the last six months entirely disappeared; the tremor and staggering disappeared eighteen months ago; there have been no more syncopal attacks; the bodily odour is gone; the catamenial intervals have become normal; and the post-nasal discharge, which used to fill half an egg-cup each morning, is less than half this quantity.

Turning from clinical to economical considerations, the improvement will be more readily credited. The mother having lost one daughter from phthisis after all sorts of treatment, wished this one to remain at home and take her chance under good climatic conditions when she learnt the usual disappointing results of our ordinary therapeutic measures in Addison's disease. At each home visit of the daughter the mother became more willing that the tuberculin treatment should be continued, and now writes me that the patient is "quite her own old noisy self again," and consents to a still further extension of the treatment if I think it necessary. The patient, however, feels quite well enough to resume her old life and home duties, and it is so arranged. She objects to take tuberculin by the mouth or hypodermically without my supervision, and will resume the trial of suprarenal substance. As in a favourable event the case will pass out of my hands, it seems a fitting time to record it. As to prognosis, I am not able to say a word.

Postscript, May 1st, 1911.—At the discussion on the above paper no one questioned the diagnosis. In conversation Mr. Pagan Lowe remarked to me that, whilst thoroughly agreeing with the diagnosis, he would like to know the further history of the case in, say, two years' time. Feeling myself that much of the interest lay in the future, I decided to suspend publication. I now publish the paper as read, and am able to add the following note, having just had an opportunity of examining the patient during a short visit to Bath:

The second trial of suprarenal extract was terminated, like the first, after a couple of months, as it was thought to disagree, and no definite favourable effect was noticed. By September, 1909, the patient was definitely not so well, and returned to Bath for four months, during which she had thirty-four inoculations of $\frac{1}{1000}$ mg. T.R. She returned home very well in January, 1910, and since then has paid only three short visits to Bath—March 28th to April 7th, 1910; November 14th to December 20th, 1910; and April 6th to 25th, 1911; receiving six, twelve, and four inoculations at the several visits. For the past fifteen months, therefore, she has remained in good health and spirits, has taken her full share in somewhat anxious household duties, and her general condition has decidedly improved instead of showing a tendency to fall back. Present condition (April 25th 1911): Pulse 72, now and then a little irregular; no bruit; blood pressure 108 mm.; no nausea, no tremor; hand grips normal; weight 9 st. 8 lb. Rarely has headaches, and gets about as of old. Has had a trying winter with nursing, etc. There is not much change in the outlines of the lighter areas (that is, a photograph would resemble the second of the two former ones), but there is a noticeable further general lightening of the pigmentation, so that friends tell her the face is much less dark than even a year ago. Palmar pigmentation, and that of the oral and conjunctival mucous surfaces, can no longer be traced.

Postscript, March 7th, 1912.—The patient remains quite well, and little further change has taken place in the details of the pigmentation, which is, however, generally lighter.

The cure has not suffered interruption in spite of the anxious home conditions occasioned by the illness and death of the patient's father.

[Photographs sent by the author show the pigment change, but are not sufficiently strong to give satisfactory reproductions.]

STATISTICS OF A SERIES OF EIGHTY-SIX CASES OF PNEUMONIA, WITH A NOTE ON ALCOHOL IN THE TREATMENT.

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It would doubtless be interesting if general practitioners were to record series of cases of the more common ailments occurring in their practices, for I am sure that there are many important factors that may be observed and notified as being useful and helpful from a point of view of diagnosis and treatment as it presents itself to the general practitioner, and to compare them with statistics as given in textbooks, which, as a rule, are statistics of cases seen and treated in hospital practice, and thus it becomes interesting to know whether cases treated in general practice and hospital practice give similar results, or whether they differ very materially, and whether one may deduce any points which would account for the different results obtained, if there are any. With this object in view I beg to record a series of cases of pneumonia which have occurred in my practice. The cases, which were of the lobar type, are 86 in number, and are tabulated as follows:

Eighty-six Cases—54 Males and 32 Females.

Age.	No. of Cases.	No. of Deaths.	Per-centage.
Under 10 years of age	10	3	30
Between 10 and 20 years	11	1	9
Between 20 and 40 years	39	9	23
Between 40 and 60 years	21	7	33
Over 60 years of age	5	3	60
Total	86	23	26

From these facts it will be seen at once that the disease is more common in males than females, and it occurs more frequently between the ages of 20 and 40, and that the mortality-rate increases with each decade, with the exception that the rate of mortality under 10 years of age is high, but the highest being over 60 years of age, it being at that period over 60 per cent. The average mortality-rate in the series is 26 per cent., and this compares favourably with the statistics given by Professor Osler in his *Textbook of Medicine*. Professor Osler says: "Hospital statistics show that the mortality-rate ranges from 20 to 40 per cent. Of 1,012 cases at the Montreal General Hospital the mortality was 20.4 per cent. Of 3,969 cases treated at the Charity Hospital, New Orleans, the death-rate was 38 per cent. Our mortality at Johns Hopkins Hospital was 25 per cent. in the whites and 30 per cent. in the coloured. In 704 cases at the Pennsylvania Hospital the mortality was 29 per cent., and at Boston City Hospital it was 29 per cent. in 1,443 cases. The mortality-rate in private practice varies greatly. R. V. Howard treated

170 cases, with only 6 per cent. of deaths. Fussen has recently reported 134 cases, with a mortality of 17.9 per cent. According to the analysis of 708 cases at St. Thomas's Hospital the mortality progressively increases from the twentieth year, rising from 3.7 per cent. under that age to 22 per cent. in the third decade, 30.8 per cent. in the fourth, 47 per cent. in the fifth, 51 per cent. in the sixth, and 65 per cent. in the seventh decade."

There are one or two points observed in connexion with this series of mine that are of interest, one being the direct infectious nature of pneumonia, there being two well-marked instances occurring in different members of the same family, three members in each case having the disease within a few days of each other, the later ones having been nursing and in attendance upon the earlier ones. In one instance one died and two recovered, and in the other instance the three died. I may say that in this latter instance I have reason to think that the disease was of a septic type, and the subjects were bad ones, being very delicate and of weakly constitution.

The other point I wish to make note of is about the value of alcohol in the treatment of pneumonia. It is held by many medical men that alcohol should form a part of the routine treatment of this disease, and formerly I may say that I held that view, and I prescribed alcohol much more than I have done latterly, and I have divided my series into two parts—those of my former treatment and those of my latter treatment—and on comparing the results I am convinced that it is unwise and unnecessary to prescribe alcohol in every case of pneumonia, for it is possible that it may, and does, do more harm than good in many cases.

The result in each category is as follows:

First Series.—36 cases with 14 deaths, or 38 per cent. mortality.

Second Series.—50 cases with 9 deaths, or 18 per cent. mortality.

The result in the second series will be seen to be much more successful, and if one excluded the three cases above referred to, as being of an exceptionally septic nature, the number of deaths in the second series is reduced to six, and the mortality-rate reduced to 12.7 per cent. It may be argued that this is a mere coincidence, but, in my opinion, it is something more; but, admitting it to be a coincidence, the fact remains that the result is better without the routine treatment by alcohol. I would mention that I have not excluded alcohol entirely, but in cases showing signs of cardiac failure by increase in pulse-rate and weakness thereof, I would prescribe alcohol, but would never rely upon it without other cardiac stimulants—namely, strychnine, digitalis, ammonia, etc., but my observation was this, that cases requiring alcohol generally proved fatal notwithstanding.

Another point of great interest is this. Four of the cases in this series occurred in persons I knew to be heavy drinkers—three men and one woman—and it is held by many if not most medical men that it is dangerous suddenly to withhold alcohol from any one accustomed to taking it, especially if that person is the victim of any disease, such as pneumonia particularly, but the result in these four cases (the number is small, I admit) is sufficient proof that this belief is fallacious, for these were treated without any alcohol at all, and the four cases recovered; whereas I firmly believe that had alcohol been administered, they would in all probability have developed delirium, and the result very likely would have been different to what it was, for it is possible that in cases of delirium accompanying pneumonia, the delirium may be as often caused by the alcohol administered as by the disease.

In conclusion, I would say that having regard to the fact that alcohol is of very little help, if any, in the treatment of pneumonia, and that it is expensive, and inasmuch as many patients and their friends are poor and can ill afford to spend money on an article which is of very doubtful value, to say the least, it behoves us as a profession to be very sparing in prescribing it, and only to do so when absolutely necessary, and when considered likely to be beneficial, at the same time bearing in mind that one has a duty to consider the economic side, and to remember that the money so spent could be turned to better account on other articles of nutriment which would be of greater benefit and help in combating the disease, and in securing the recovery of the patient.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SWEETS IN CHILDHOOD: SUGAR CANE.

In a previous communication the physiological necessity for sweets (or sugar) in childhood, and also the possible pathological effects arising therefrom have been alluded to. It was then pointed out that it was necessary in order to obviate the lactic fermentation of sugars in the mouth, and especially cane sugar, that they should be combined with a weak organic acid in order to induce reflexly a greater flow of protective saliva, and also to precipitate the mucin which in its viscous form binds the sugar to the teeth.

The example of native children eating large quantities of sugar cane is frequently quoted as evidence that cane sugar cannot be productive of dental caries since such children have for the most part quite healthy teeth. A sample of fresh sugar cane has recently been received from Fiji (in a hermetically sealed case), and has been tested with a view to ascertaining its possible effect on the teeth. The tests applied were those which have previously been used in connexion with a large number of other food-stuffs, and the results of which have recently been published in the author's *Prevention of Dental Caries and Oral Sepsis*.

The following are the observations as regards sugar cane:

1. The juice of the sugar cane is markedly acid.
2. The saliva induced reflexly by the mastication of cane sugar was collected by means of the cannula and segregator from one side of the mouth; it amounted to 3.5 c.cm. per minute or 7 c.cm. for the whole of the glands. The alkalinity of the saliva was 0.94 unit (c.cm. $\frac{N}{50}$ NaOH) per c.cm., or an alkalinity index of 6.58. This is about six times that invoked by bread and butter.
3. The débris remaining in the mouth and on the teeth was collected and incubated for twenty-four hours and at the end of that time showed a mean alkaline reaction of 0.31 units, thus placing it between apple (0.3) and orange (0.5) from a protective point of view.
4. The sugar cane is, of course, very fibrous, and it has been suggested that immunity to caries may be due to this fact. It may be so to a certain extent, but is more likely due to the acid reaction of the juice. For instance, (*a*) sugar cane was masticated thoroughly, including the fibres, and débris collected and incubated; the alkalinity developed was equal to 0.26 unit; (*b*) sugar cane was imperfectly masticated, but the juice thoroughly sucked out, and the reaction of the incubated débris again estimated, when it amounted to 0.37 alkalinity unit; whereas a 10 per cent. solution of refined cane sugar (that is, minus its acid) gave rise to an acid formation of 0.1 unit.

It would therefore appear that more protection is afforded from the acid juice than from the fibrous elements, which are distinctly "woody" and devoid of flavour and, therefore, of any reflex stimulating effect upon the salivary glands.

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A METHOD OF REDUCING DISLOCATION OF THE JAW.

On March 11th a young woman was brought to me for the fourth time with dislocated jaw. On each of the three previous occasions reduction had been accomplished, though with considerable difficulty, in the usual fashion as described in the textbooks and lectures. On trying the same proceeding on this occasion, I hurt both my thumbs considerably, but could make no impression on the dislocation. I therefore tried the following plan, which suggested itself to me: Standing *behind* the patient, with the patient's head against my chest, I placed the right thumb in the mouth far back on the right side, at the same time grasping the chin with the left hand. I found I could then readily depress the jaw with the right hand, and the left guided the right condyle into its socket. Reversing hands, I did the same on the left side without any trouble.

This procedure is so much more easy, direct, and certain than the textbook method that I think it scarcely possible that it has not been used by someone before myself. At all events, I can recommend it confidently.

Harston, Cambridge. W. J. YOUNG, M.R.C.S., L.R.C.P.

THE MANAGEMENT OF CARDIAC FAILURE IN DIPHTHERIA.

IN Dr. Coghlan's interesting paper on the "cardiac vomiting" of diphtheria, he alludes to encouraging results that he has had from the administration of atropine, strychnine, and adrenalin hypodermically. I have used this method in a large number of cases during the last seven years—though not always employing atropine, and sometimes using morphine—with very good results indeed. But the dosage of the strychnine and adrenalin combination, which is the chief element, may, even in young children, be far more liberal than Dr. Coghlan suggests. A child will stand $\frac{1}{60}$ grain of strychnine and the same amount of hemisine or adrenalin every two hours until the urgency of the symptoms abates, when the dose may be lessened.

There is, too, positive advantage in giving the adrenalin frequently, and it may well be remembered that, as these cases are really in great part cases of suprarenal insufficiency of acute origin, it is only rational to suppose, what is indeed the fact, that they easily support considerable doses of suprarenal extract. On the other hand, the cases with slow pulse—some at least of which are cases of heart-block, as has been lately shown—do not call for such active treatment with adrenalin. When experience has extended over a term of years, it is realized that these cases of "cardiac vomiting" in diphtheria really fall into different categories, with differing incidence of the poison on different organs; and the treatment has of necessity to be varied.

London, W. F. G. CROOKSHANK.

TUMOUR OF THE PONS: EARLY FATAL RESULT.

IN the following case a diagnosis of tumour of the pons was made, but I shall be glad to have suggestions as to an alternative diagnosis.

On February 12th her mother spoke to me about E. B., aged 22, saying she was passing very large quantities of water and having to get up two or three times in the night to do so. She complained of thirst and had some headache; her periods had always been regular every twenty-six days, and the loss very profuse. She was slightly anaemic, but seemed very bright and cheerful. She had pronounced wasting of the adductor muscles of the right thumb. The urine was of a low specific gravity, and contained no sugar or albumen. Thinking it was probably a neurotic condition I gave her a tonic of nux vomica and dilute hydrochloric acid.

Within ten days her headache had quite gone, and the thirst nearly so, although the quantity of urine remained much as before. On February 27th she drove out with a friend to a farm five miles away, and from there walked on three-quarters of a mile to another house for tea. She walked back to the farm immediately after tea, and almost at once complained that the marmalade she had just had tasted very nasty. Her friends, seeing that she looked faint, went to assist her outdoors, but before they could do so she collapsed on the floor. As she did not "come round" or speak again, they made up a bed for her in a milk float and drove her home, calling for me at my house on the way.

On arrival home she opened her eyes slightly once or twice, and at first nodded and smiled in answer to repeated questions, but almost at once passed a large quantity of water under her and relapsed into total unconsciousness. She retched several times and vomited a little on her way home and during the night. The vomit was ropy mucus and bilious, but quite without smell. The pupils were equal and slightly dilated. The corneal reflex was present, but no light reflex. The heart sounds were normal, pulse 82, and respirations regular and quiet.

During the night she passed water under her several times. The next morning her breathing was more laboured and quicker. She was slightly flushed and had been perspiring a good deal.

I got Dr. Couper of Blaby to see her with me in the afternoon. By then her respirations had become far more rapid and difficult; she was exceedingly flushed and perspiring very freely, the pulse 120, the temperature 103°, and the pupils as before. The knee-jerks were absent, the plantar reflex extensor and exaggerated. The right arm, which she had not moved since arriving home, showed some rigidity but no paralysis. She was buttoning and unbuttoning her nightdress with the left hand. We drew off a sample of urine and again found no sugar or albumen. After considering all possibilities we diagnosed the case as one of a tumour of the pons.

By the time we had finished the examination her respirations had taken on a Cheyne-Stokes type. She died that night at 7.30. A necropsy was refused.

Her family history was unimportant, save that her mother had hip joint disease as a child. The patient herself had never been ill except for a short attack of laryngitis seven years before.

C. M. L. COWPER, M.R.C.S., L.R.C.P.

Peatling House, nr. Leicester.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

STAFFORDSHIRE BRANCH.

Stafford, Thursday, February 29th, 1912.

W. D. SPANTON, F.R.C.S., President, in the Chair.

Cases.

DR. MILNES BLUMER showed (1) a little girl treated for a naevus of the lower lip spreading to the mucous membrane with three applications—each exposure lasting forty seconds—of CO_2 snow. The cosmetic result was seen to be extremely good. (2) A youth upon whom he had performed abdominal section on four occasions in the course of eight months. The first operation was for intestinal obstruction, and revealed a volvulus, due to a band, of the small intestine. Murphy's button was used, and the second operation was for rupture of the bowel at the site of the anastomosis. An artificial anus was quickly made, no attempt being feasible, on account of the condition of the patient, to clean the peritoneal cavity. A week later lateral anastomosis was done. The fourth operation was again for intestinal obstruction, due to adhesions. The scar left is very satisfactory and shows no sign of yielding. The case was discussed by the PRESIDENT and Dr. HARTLEY.

The Diagnostic Value of Pain.

Dr. HODDER read a paper on this subject. After introductory remarks, he briefly traversed the grammar of the subject by differentiating pain into direct or cerebro-spinal, and referred or sympathetic pain, and correlating with the latter the other reflex phenomena on the sensory-motor and organic sides. The importance of the careful study of the distribution of pain was insisted on, and the necessity for an accurate knowledge of nerve paths in the interpretation of painful symptoms. Cases were described bearing out these principles, particularly one in which cervical pain was the earliest symptom of apical tuberculosis. Reference was also made to the wide radiation of pain from an often insignificant focus in the neurotic type of patient, in whom all the nerve centres are in a state of irritable weakness, so that a stimulus affecting one may set numerous others responding, so making more difficult diagnostic problems. In conclusion Dr. Hodder drew attention to the value of the study of pain in the region of prognosis, where, more than elsewhere, the physician was drawing a bow at a venture. A short discussion followed, in which the PRESIDENT, Dr. LOWE, and Mr. LUCAS took part. Dr. HODDER briefly replied.

Bedside Manners.

Dr. C. M. MITCHELL read a paper on "Bedside manners of eminent London consultants." He dealt with various picturesque, interesting, and characteristic features of many of our foremost physicians and surgeons in their relationship with their patients. He pointed out that careful consideration for the "personal equation" as regards the individual and scrupulous regard for the interests of the medical attendant was almost invariably in evidence in a conspicuous degree. In the course of a chatty consideration of the subject, it was suggested that a close sympathy with the individual and with the medical man was worth cultivating, as adding to the satisfaction of the sufferer and more cordial relationship between the members of the profession. The paper was discussed by the PRESIDENT, Dr. CHARLES REID, Dr. LOWE, Dr. HATTON, and Dr. CRIDLAND.

Specimens.

Dr. COOKSON described an interesting case of cerebellar tumour of a tuberculous nature, and showed the carefully mounted specimen. The diagnosis at first was very obscure, and the case for some time was thought to be hysterical. Dr. LOWE and Mr. LUCAS discussed the case. Dr. COOKSON also showed some interesting varieties of gall stones.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, March 14th, 1912.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair.

Intra-vitam Staining.

PROFESSOR DR. E. GOLDMANN, of the University of Freiburg, Baden, communicated a paper on a new method of examining normal and diseased tissues by means of *intra-vitam* staining. The author stated that his original method of *intra-vitam* staining by injection of trypan and isamin blue has been greatly advanced in the following points:

1. Exact dosage for subcutaneous and extravenous work.
2. A large number of newly discovered stains which, though of varied chemical constitution, yet react in manner of trypan and isamin blue.
3. Improved fixation methods for embedding vitally stained specimens in paraffin. Report on new counterstains permitting of specific differentiation amongst constituent cells of connective tissue.
4. Comparative histological work on frogs, mice, rats, etc.; striking similarity ascertained in morphological structure and physiological activity of cells, such as Kuppfer cells of liver in all animals hitherto examined.
5. Further studies of normal tissue vitally stained: (*a*) Closer investigation of the placenta, proving that the same fetal placental cells which absorb the vital stain, control the distribution of glycogen, fat, and other substances requisite for fetal nutrition. (*b*) Pyrrhol cell. Different behaviour in newborn and adult, chief seat of production, *taches laiteuses* of omentum and bone marrow.
6. Studies in diseased tissues vitally stained: (*a*) Experimental tuberculosis production in mice by intraperitoneal injection of avian and bovine bacilli. Fundamental difference between the two types in mode of dissemination and relation to the vital stain. (*b*) Healing of wounds. (*c*) Muscular trichina and intestinal worms. (*d*) Malignant growths, with their specific reaction on "Pyrrhol cell."

The Effects of Ultra-violet Rays on the Eye.

Dr. E. K. MARTIN read a paper on this subject, in which he described three lines of investigation he had carried out, in each case on rabbits:

1. *Absorption.*—Using an iron arc as the source of light and a quartz spectrograph, the absorption of the media of the eye was found to be as follows: Cornea: All rays of wave lengths less than 295 $\mu\mu$ are cut off completely. Lens: Absorption commences at 400 $\mu\mu$ and is complete beyond 350 $\mu\mu$. Vitreous: Shows a broad absorption band with ill-defined margins extending from 280 to 250 $\mu\mu$. All the media were found to be uniformly permeable to rays between the wave lengths 660 to 400 $\mu\mu$.
2. *Repeated Exposure of Eye to Light containing a High Proportion of Ultra-violet Rays.*—The source of light was a mercury arc enclosed in a quartz tube (Kromayer lamp). A series of animals were exposed at repeated intervals during from three to twelve months. They showed marked inflammatory reaction in the cornea and conjunctiva, and in one case a proliferation of the cells of the anterior lens capsule.
3. *Transmission of Haemolysins to Aqueous Humour after Exposure of Eye to Short Wave-length Rays.*—The aqueous of animals sensitized to the blood of another species has no power of haemolyzing red blood corpuscles of that species. After exposure of the eye of such an animal to the quartz mercury-vapour lamp, the aqueous became actively haemolytic and remained so for a period not as yet determined, but in any event longer than the duration of the resulting inflammatory changes.

Radium in Carcinomatous Tumours.

Dr. W. S. LAZARUS-BARLOW said the evidence he had previously advanced that acceleration of electroscopic leak might be produced by the residue of carcinomatous tissue after its extraction with ether and subsequently with water, or after extraction with acetone, had been criticized on the ground that the results were small and possibly explicable by alteration in capacity of the electroscope occasioned by introduction of the substances within it. The subject was therefore reinvestigated with an electroscope of constant capacity in which a fixed wire grating separated the portion containing the gold leaf from the portion into which the substances were introduced. Twenty-seven samples of primary carcinoma, 8 of secondary carcinoma, 2 sarcomata, and 5 normal livers and lungs were examined under these conditions, and the original conclusion was confirmed. Seven of the above specimens were also boiled with HCl and set aside for four weeks in sealed flasks, and at the end of that time were examined in an emanation electroscope for radium emanation. The results were as follows:

Reference Number.	Leak in Constant Capacity Electroscope (N.L.=1).	Divisions per Minute Due to Emanation (Emanation Electroscope).
Normal liver (437)	.94	0
Primary carcinoma (697 G)...	1.06	.004
" " (147 C)...	1 20	.004
" " (791) ...	1.48	.068
" " (793) ...	2.24	1.373
" " (697 C)...	21.28	153.5
Secondary carcinoma (440)...	1.29	.292

Compared with a standard Ra solution these values indicate amounts of radium varying from 0.188×10^{-8} mg. to 2.73×10^{-5} per gram of dried acetone-extracted carcinoma. The reagents were then tested and found radium-free; care was taken to avoid possible contamination with radium, and none of the patients in whose cases radium was found had been treated medically with radium in any way or form.

Estimation of Opsonic Index.

Mr. CHARLES RUSS, M.B., described an improved method for opsonic index estimations involving the separation of red and white human blood corpuscles. He said that the opsonic process had been found inaccurate, and almost abandoned. Its liability to error depended chiefly upon the large variation in bacterial content of the leucocytes. This variation made the "error of random sampling" liable to be large (Greenwood and White), and this purely mathematical error had doubtless been at times responsible for the apparent differences of opsonin when contrasting two serums (normal and diseased). By repeatedly estimating the opsonin of a normal serum, in which all the materials were the same, I found the deviation from the mean was liable to be large. From general considerations this "content variation" was presumed to depend upon an uneven distribution of bacteria amongst the leucocytes. A scrutiny of the old method showed two serious defects, namely:

(1) Presence of 500 useless red corpuscles to every leucocyte (hindering access of bacteria to leucocytes, and their even mixture).
(2) Sedimentation of the opsonic mixture during incubation (also hindering access, etc.).

To remove these defects (1) the leucocytes were separated in bulk from the red corpuscles in human blood by an extension of Dr. Ponder's work on leucocytes, and used for the improved process; (2) the opsonic mixture was kept in rotary motion during incubation by a suitable mechanism. When repeated tests were made with the same materials by the improved method there was a largely reduced liability to error. This affected both the average and maximum deviation from the mean value. The observed errors by the improved method were one quarter the magnitude of those by the old process, the conditions of experiment being almost completely comparable.

A Clinical Study of Experimental Fever.

DRS. E. C. HORT and W. J. PENFOLD recalled that in 1911 they showed that ordinary distilled water and solutions in it of salt frequently exhibit pyrogenetic properties as the result of contamination with a hitherto undescribed body. This substance appears to be an extractive in water or saline of bacterial protein, but its presence bears no relation to the number of micro-organisms demonstrable at the time of injection of liquids containing it. It is heat-stable, is of small molecule, and will pass the ordinary bacterial filters. It had now been shown that the existence of this contamination to a great extent vitiated deductions drawn from previous work on the causation of fever after injection of a variety of substances dissolved or suspended in water or saline. Water fever, salt fever, fibrin ferment fever, protein fever, tissue fever of various kinds, and sugar fever were generally regarded as different types of fever depending on the

injection of substances credited with the possession of specific pyrogenetic functions. In each case water or saline had been the injection medium. The authors showed by a series of charts that the unsuspected presence of the contamination referred to was an important determining factor in the production of many of these types of fever. Control charts showed that the injection of salt, fibrin ferment, glucose, lactose, saccharose, and tissue extracts of various kinds in water innocent of this contamination did not produce fever. They concluded therefore: (1) That the establishment as separate entities of these various types of fever no longer rested on secure ground. (2) That future advance in the experimental study of fever was not possible unless precaution be taken to ensure that the water or saline used for injection was free from the fever-producing body described.

Effects of Drying Non-sporing Bacteria.

Mr. S. G. SHATTOCK and Dr. L. S. DUDGEON reported certain results of drying non-sporing bacteria in a charcoal-liquid-air vacuum. The bacteria used comprised *B. coli*, *B. typhosus*, *Staphylococcus pyogenes aureus*, *B. pyocyaneus*. Cultures in peptone water were inoculated to slips of glass, and after being allowed to dry in the air were transferred to test tubes, from which the air was exhausted by means of a motor pump, the vacuum being completed by Sir James Dewar's charcoal and liquid-air apparatus; the use of mercury was avoided. The results were compared with those obtained by simple air-drying. The action of light was excluded during the experiments. *B. typhosus* and *B. coli* died both *in vacuo* and in air-dried slips within five days. *S. pyogenes aureus* persisted considerably longer under both conditions. The interest centred round *B. pyocyaneus*. Air-dried films did not survive beyond nine days. The slips kept *in vacuo* were alive at seven months, and the authors were ascertaining how much longer this bacterium will live *in vacuo*. *B. pyocyaneus* was submitted *in vacuo* to the action of heat, and also to the sun's rays (the sealed vacuum tubes being submerged in water). Its resistance to these agencies, in the dried state, *in vacuo*, was not materially, if at all, increased. The bacillus was killed, moreover, by the action of ultra-violet rays on being removed from the vacuum and treated in an atmosphere of nitrogen. So far as the possibility of interplanetary bacterial life is concerned, it was evident that bacteria in the fully dried state, if free in the interplanetary vacuum, would be killed by the solar light. And as Sir James Dewar's experiments had demonstrated that the ultra-violet rays will kill undried bacteria whilst in the frozen condition at the temperature of liquid air, there was little to support the hypothesis that the living protoplasm on the earth originally immigrated from interplanetary space in a free or unincluded condition—that free, particulate life had entered the earth's atmosphere, as a result of light propulsion, from extramundane space.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Friday, February 16th, 1912.

Dr. A. J. HORNE, President, in the Chair.

Cancer of the Stomach simulating Ovarian Cyst.

Dr. H. JELLETT showed a specimen of cancer of the stomach which had simulated ovarian cyst. The patient, aged 64, had had six children, the last pregnancy being in 1888. On admission to hospital in January she complained of pain in the abdomen, which for the last six months had been getting larger. The physical signs were: Uterus small and atrophied, the abdomen contained a semi-cystic tumour about the size of a seven months pregnancy, and there were some nodules in the right iliac fossa. There were no gastric symptoms. On opening the abdomen a swelling the size of a football—tense and covered with large veins—was discovered. It was attached to the liver above, and below it lay the transverse colon and small intestines. There was a firm adhesion between the abdominal wall and the tumour on the left side. A couple of hard nodular masses were to be felt to the right of the tumour in the right iliac region of the right kidney. It was found impossible to do anything, and in about a week after the operation the patient died from heart failure. At the *post-mortem* examination it was found that the tumour was a malignant growth originating in the stomach. Dr. KIRKPATRICK said that in respect of malignant disease of the stomach producing no gastric symptoms he had heard of four such cases this year. In one of those patients practically the whole stomach was involved, yet the patient presented no gastric symptoms. He had recently seen the stomach of a patient who had been under treatment for some time, and when the abdomen was opened it was found that there was a malignant tumour of the pylorus. It was, he thought, well to remember that malignant disease of the stomach might occur and reach an advanced stage without showing any signs of gastric trouble. The PRESIDENT asked if the tumour was more on the left side than on the right. Dr. JELLETT, in reply, said that the tumour filled the whole abdomen, the liver being displaced and rotated.

SECTION OF SURGERY.

Friday, March 1st, 1912.

Mr. R. H. WOODS, President, in the Chair.

Extirpation of the Larynx.

THE PRESIDENT showed a woman, aged 32, from whom he had extirpated the larynx and a segment of the gullet for a post-cricoid carcinoma on December 26th, 1911. He had tried to restore the continuity of the gullet so as to permit closure of the wound, but the inevitable cicatrization prevented this. He had, therefore, devised an apparatus which not only permitted deglutition with entire comfort to the patient, but also enabled her to talk, except at meal times, with perfect freedom and good tone.

Gastro-jejunal Ulcer.

Mr. W. PEARSON described a case of gastro-jejunal ulcer in a patient who, two years previously, had been operated on for a perforated duodenal ulcer, and on whom, seven months later, a gastro-jejunostomy had been performed for recurrence of symptoms. The resulting relief lasted only two months. Then symptoms suggesting a return of the ulcer appeared, and had since persisted. At the operation two gastro-jejunal ulcers were found, and three portions of silk sutures, which had been employed in the gastro-jejunostomy fifteen months previously, were removed from the junction by the transgastric route. Mr. GUNN said he remembered the patient and was not satisfied as to the cause of the ulceration. The man drank a good deal, and was careless as to the quantity and quality of his diet, which probably had something to say in his condition. Ulcers as a sequence of gastro-jejunostomy were, he thought, more rare than the ½ per cent. suggested by Mr. Pearson's statistics. Mr. WM. TAYLOR was of opinion that many such cases resulted from imperfect technique. The removal of too much mucous membrane very often gave rise to the condition, and the presence of Murphy's button in former days largely contributed to the number of cases. He would be slow to say that the use of silk had anything to say in the production of such a condition, but perhaps haematoma may have an influence on the formation of gastro-jejunal ulcer. He did not think that jejunal ulcers developed with anything like the frequency mentioned. In one case, where he felt certain of jejunal ulcer, he opened the abdomen, but found everything all right. Mr. PEARSON, replying, thought it was difficult to accurately estimate the incidence of such ulcers, owing to the fact that the symptoms to which they gave rise were very much the same as those felt previous to operation, and patients, therefore, concluded that the operation had made no improvement, and did not come back for further treatment. Attention had been drawn to the fact by writers that gastro-jejunal ulcers were rare in America, and this was attributed to the better technique. Silk, even in the outer sutures, might give rise to the condition. The apposition of the mucous membranes was also of importance, as the more accurately they were placed the less chance was there of ulcer formation. In reply to Mr. Cahill, he said that in respect of administering alkalis the most scientific method was to analyse the gastric juice. In the present case from 5 to 10 grains of sodium bicarbonate had been given, and no ill effects had manifested themselves. He had no experience of vaccines in such cases, but if there was any local cause for the condition he would not anticipate a cure by this means.

MEDICAL SOCIETY OF LONDON.

Monday, March 11th, 1912.

Dr. Mitchell Bruce, President, in the Chair.

X-rays in the Diagnosis of Hydronephrosis.

Mr. Thomas Walker read a paper on this subject. The means of diagnosis of hydronephrosis and their practical value were shortly stated. Hydronephrosis presented two clinical stages—the first, in which symptoms alone were present, and the second, in which a swelling was found in the loin. The functional value of the kidney in the second stage was greatly impaired, and after relief of the obstruction the kidney did not return to its normal state. In the first stage there were two groups of cases. In one there was an obvious cause of hydronephrosis present (ureteric calculus, movable kidney), in the other no such cause could be demonstrated (hydronephrosis due to valves, stenosis, aberrant vessels). The symptoms of commencing dilatation in these groups were discussed, and it was stated that they were variable and of little diagnostic value. Dilatation of the kidney was seldom diagnosed before a palpable tumour appeared in the loin. Exploratory operation was too serious a method for adoption in all cases. The *x*-ray diagnosis consisted in (*a*) finding an increase in the shadow thrown by the kidney. In early dilatation special measurements must be made in a fixed position in order to recognize the enlargement; (*b*) pyelography, which consisted in filling the pelvis of the kidney with an innocuous fluid opaque to the *x* rays (collargol) and obtaining a radiogram. The dilated pelvis was less sensitive to distension than the normal pelvis. Commencing dilatation was shown by clubbing and elongation of the calyces, and the pelvis became globular. The angle of union of the renal pelvis and ureter was shown by pyelography, and kinking could be demonstrated. The ureter, pelvis, and upper renal calyx should be in a straight or slightly curved line. The angle formed by the ureter, pelvis, and lower calyx should be wide. The position of the obstruction was shown by a stone shadow, a kink at the junction of the ureter and pelvis, or the shape of the collargol shadow. Illustrations were given of the value of pyelography in the diagnosis of commencing dilatation of the kidney in ureteric calculus, of persistent dilatation of the kidney after relief of obstruction, of the presence or absence of dilatation in movable kidney and after nephropexy, of kinking of the uretero-pelvic junction, and in the demonstration of an actively contracting ureter in hydronephrosis due to movable kidney, and the diagnosis of hydronephrosis due to aberrant renal vessels.

The X-ray Examination of the Urinary Tract.

Dr. W. Ironside Bruce read a paper on this subject. He pointed out that the success of such examinations was dependent upon (*a*) the mode of application, and (*b*) accurate interpretation of the results, which could only be obtained by combining the experience of the radiologist with that of the clinician. Shadows of even familiar objects might be quite unrecognizable, for distortion was easily produced. A ready recognition of anatomical points was necessary. Further shadows of calculi had to be differentiated from those cast by other objects, such as calcified abdominal glands. In the method employed by him and his collaborators at St. Peter's Hospital the *x*-ray tube was placed in all cases in a definite anatomical relationship to the part examined, a manœuvre which resulted in a radiogram which was symmetrical, familiar to the observer, and permitted of shadow relationships being used as a means of diagnosis. The application of the method was shortly as follows: The patient was placed face downwards on a canvas couch, the tube being arranged underneath it. The anode of the tube was centred accurately by a mechanical contrivance opposite the spine of the second lumbar vertebra, a pad or compressor being placed under the abdomen, the patient allowing his weight to rest upon it. Whenever possible exposure was made while a full inspiration was maintained. The relative position of the ureters and pelves of the kidneys in such views had been ascertained by securing radiograms in a like manner, after catheterization of the ureters with catheters opaque to the *x* rays and injection of the renal pelves with collargol. Photographic representations were indispensable. Some preparation of the abdomen was necessary to get the best results, starvation being better than purgation, which frequently produced gas, leading to confusion. The quality of the radiograms should permit an outline of the kidney to be seen, the bones should be clearly definable, and the margin of the psoas muscle easily made out. Dr. Bruce then showed how this method was applicable to the radiography of various abnormalities of the urinary tract, illustrating his remarks by lantern slides of radiograms taken from particular cases.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, March 14th, 1912.

Mr. J. B. Lawford, President, in the Chair.

Mr. Herbert, in a paper entitled *A distinctive conjunctival papule*, described a somewhat prominent, defined, painless, papular swelling, which was found on the interpalpebral ocular conjunctiva; it was fairly common in India and apparently rare in Europe. It occurred in adults, chiefly in males, and most often at the inner side of the cornea. It was generally of a pale pink colour, paler than the immediately surrounding injected conjunctiva, and there were a few enlarged blood vessels running to it. It might stain feebly with fluorescin and last two or three weeks only, or considerably longer. Its chief histological features were great epithelial proliferation, more or less inflammatory infiltration, and elastic tissue degenerative changes. In the more active cases the epithelial cells were much enlarged, and multinuclear epithelial giant cells were to be found. Where epithelial down-growths were unable to form, owing to firm supporting fibrous tissue, the nutrition of the epithelial mass was served by the penetration of thin-walled blood vessels into it.

Conical Cornea.

Mr. Worth, in a paper on the operative treatment of conical cornea, described a new operation for this condition. He said that in most cases which needed operation there was a very high degree of myopic astigmatism, sometimes as much as 15 or 20 dioptres, with little spherical error, and even with the most accurate combination of correcting lenses vision was usually very poor. The instruments required for his operation were a platinum thermo-cautery and spirit lamp, and a broad needle and spatula for tapping the anterior chamber. The platinum cautery had a flat surface of an elongated oval shape. The eye was cocainized and a drop of eserine instilled. A spot was selected on the cornea in the meridian of greatest curvature, nearly midway between the summit and margin of the cornea, but very slightly nearer the summit. The cautery was heated in the spirit lamp and held over the eye until it almost ceased to glow in daylight. It was then applied to the cornea at the selected spot with its long axis at right angles to the meridian of greatest curvature. It should only be left in contact with the cornea for an instant; two or three applications were usually required, the cautery being heated each time. A cavity should be made about 4 mm. long and 2 mm. wide, with steep edges and extending nearly down to Descemet's membrane, but very great care should be taken to avoid opening the anterior chamber. Descemet's membrane appeared to be more resistant to burning than the substance of the cornea, or perhaps the aqueous protected it in the same way as water protected a tin kettle. With care the cauterization could be continued until the membrane was seen bulging at the bottom of the wound. Then the anterior chamber was tapped near its periphery and the aqueous evacuated. The anterior chamber was tapped near its periphery on each of the following three or four days, and after that on alternate days, until the ulcer had healed. The main points of the operation were: the dangers of a communication between the wound and the interior of the eye were avoided; the frequent evacuation of aqueous promoted rapid healing of the wound and greatly increased the effect of the operation; by concentrating the effect of the operation chiefly upon one meridian and so reducing the myopic astigmatism better visual results were obtained than could otherwise be hoped for; no subsequent iridectomy was required. Mr. Worth said that the operation was so safe and satisfactory that he would not hesitate to recommend it in a case of non-progressive myopic astigmatism of extremely high degree.

Allantoin.

Mr. W. H. BRAILEY, in a paper, entitled "A New Cell Proliferant," drew attention to this drug. Its action was not that of an antiseptic. So far from that being the case, it actually encouraged the growth of organisms, but its great use was that it encouraged the proliferation of the cells of the tissues. He mentioned the case of a small corneal ulcer, which, after cauterizing and the application of various remedies, did not get well. Drops of allantoin quickly caused a marked improvement. He mentioned several similar cases, and explained the beneficial action of the drug by its causing the cornea to receive extra nourishment. He considered that the drug was well worth a trial in all cases of long-standing keratitis and possibly scleritis.

Chronic Glaucoma.

Mr. ZORAB, in a paper on the relief of tension in chronic glaucoma, gave a preliminary report on a new operation. After briefly reviewing the existing operations, he indicated that the guiding principle in each was drainage of the interior of the globe. He then went on to describe his own procedure, based on the same guiding principle. He described two methods, of which the second was, in his opinion, the better. Originally he passed a threaded needle subconjunctivally into the anterior chamber, piercing the sclerotic coat at the angle. The needle was then brought out at a corresponding point through the angle and out again subconjunctivally. The ends of the silk were cut short and a little manipulation ensured their being covered by conjunctiva. He found, however, that the conjunctiva was very frequently torn by the fixation forceps, and also there was some risk of pricking the iris and lens capsule with the point of the needle. Acting on the suggestion of Mr. J. F. Bullar, he modified the operation thus: A large flap of conjunctiva was raised—at the upper part of the globe for choice—leaving a crescentic attachment along the limbus. A small incision was then made under this flap into the anterior chamber. A piece of sterile silk thread, about one-third of an inch long, was doubled on itself, and the loop was pushed gently through the sclerotic incision into the chamber. The conjunctival flap was then replaced and stitched in a couple of places, great care being taken to see that the distal ends of the bight of silk did not come near the margin of the conjunctival incision. Mr. Zorab claimed for this procedure that it was quite devoid of manipulative risk, that it established efficient drainage, which promised to be permanent, and that it was simple to perform. The only danger, in his opinion, was from sepsis, but he did not regard this as being any greater than the other operations involving opening the eyeball. The greatest emphasis was laid on ensuring a complete covering of the silk by healthy conjunctiva. As the oldest case only dated back to July, 1911, he was careful to state that the operation was only on trial, but he was firmly convinced that it held out good promise. He had so far restricted it to cases of chronic glaucoma, as acute cases did well with iridectomy.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Thursday, February 22nd, 1912.

Dr. WILLIAM DAWSON, President, in the Chair.

Myxoedema and Insanity.

DR. G. F. BARHAM, in a paper on insanity with myxoedema, said the conception of the etiological significance of myxoedema in reference to the mental disorder known as insanity of myxoedema had been much modified since hypothyroidism was regarded as the principal causal factor. The question to be answered was to what extent were the symptoms of insanity occurring with myxoedema influenced during the recovery from that disease under thyroid treatment. It was uncommon to see in an asylum a case showing only the apathy and the volitional and memory defects of simple myxoedema; mostly there were insane ideas indicating a more complicated process. The mental symptoms were often examples of manic-depressive insanity, or dementia praecox, or they might show dissociation or other mental processes underlying hysteria. As an illuminating case he related that of a married woman, aged 34, who was the survivor of twins, and in whose family there were several instances of insanity.

She was married eleven years, and in that time bore eight children. Following the third confinement she had symptoms of myxoedema, with terrifying dreams and visions. She made a fair recovery. After the four succeeding confinements there was always great prostation and debility, with severe head pains, insomnia, and loss of appetite. She also took to spirit drinking, and showed various unfounded suspicions. Physically she was in poor health, and the extremities were cold and pale, but there was no organic disease of any organ, and the reflexes were normal. The life of the patient was deeply influenced by certain incompatible emotional factors at conflict with one another.

He contended that, though under thyroid treatment the patient appeared to recover, so that she was able subsequently to remain outside an asylum, the abnormal mental state was an indication of the independent progress of the psychosis. He therefore concluded that the prognosis of insanity with myxoedema was not so favourable as had been frequently thought to be the case. The subject was discussed by Dr. STANSFIELD, who narrated the case of a woman who married at the age of 20 and had four children. The symptoms of myxoedema were first noticed at her fourth pregnancy. Phosphorus had been given under the prescription of specialists, and a bad prognosis was given. This was in 1888, and it was decided to treat her with glycerine extract of sheep's thyroid, as suggested by Dr. George Murray of Newcastle. The reaction was remarkably good, and she was eventually discharged recovered. Three years later she again became pregnant, and the birth was premature at the sixth month. For two years following she had mild psychasthenia, from which she recovered. Dr. J. R. LORD said his own experience agreed with that given by Dr. Barham, and supported the prognosis he had given. In his cases there had nearly always been considerable general arterio-sclerosis with, in some cases, alcoholism as a secondary factor. Psycho-analysis could not be undertaken in every case, as it required too much time. Dr. EDEN PAUL remarked that many cases of hypothyroidism, as the general practitioner was well aware of them, did not now come under the notice of the psychologist; they were treated by thyroid extract by the doctor. Those were the cases which justified the favourable opinion when so treated which was found expressed in general medical literature. The very fact that such a case came under the notice of the asylum medical officer showed that thyroid treatment had failed to remedy the condition. Dr. BARHAM, in reply, stated that in the cases of the kind in that asylum he had not noticed arterio-sclerosis. There was one case now in the asylum, but her mental symptoms were much too acute to permit of any investigation.

Forced Feeding.

Dr. DAVID BLAIR (Lancaster), in a paper on forced feeding, set forth his experiences in keeping alive by forcible means patients, chiefly female, who uniformly resisted to their utmost every attempt at compelling feeding and the other necessary functions. In one such case the patient was kept alive for nine years, and he paid a tribute to the devotion of the nurses over such a long period. The question was discussed by a number of members, and the comparative merits of nasal and oesophageal feeding were debated. The latter form was considered the more rapid, while the former was preferable for the most violent type.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on March 7th, Mr. ROBERT JONES, President, in the chair, Mr. THELWALL THOMAS, in a paper on the *Diagnosis and treatment of calculi in the ureter*, analysed 17 cases on which he had operated. The most marked symptoms were pain, haematuria, and pyuria. Pain had been present in all the cases, and in most there was aching pain, often shooting into the testicle, sometimes unilateral, but not always felt on the side on which a calculus was found by the *x* rays. In 11 the pain had been intermittent and colicky. Haematuria was present in 10 of the cases, in some of these in very small amounts. Pyuria was present in about half the cases, in some along with haematuria, in 3 cases there had been neither haematuria nor pyuria. The most reliable indication was the presence of

well-marked shadows on the radiogram in the line of the ureter, but even this was not absolute in the lower inch or so of the duct. In such cases the cystoscope helped. The ureteral bougie had been used, but it might pass beyond a stone, and so lead to wrong conclusions. The exhibitor had found no treatment which aimed at dissolving the calculi of any use, though large quantities of fluid might, by washing the stone through the ureter, lead to its expulsion. In operating he preferred and recommended the iliac route for all cases. In the discussion that followed, Mr. F. T. Paul said he had found laryngeal forceps useful in seizing the calculi, and showed some devised by him with a long flexible shaft and alligator jaws. Dr. T. Holland emphasized the need for a radiographic examination on the day of the operation, as the stones moved and might disappear. Dr. O. T. Williams read an abstract of a long and elaborate paper by himself and Dr. Mildred Powell on the *Treatment of diabetes mellitus*, which included charts compiled from daily observations for months by Miss Powell on patients in the Royal Infirmary. In the study of the cases treated by diastase there was an obvious action on nitrogen or carbohydrate metabolism or on the organic acids; throughout the whole series of cases there were small changes in reactivity of the urine to different indicators, whether the diastase were given in liquid or solid form or in capsules insoluble in the stomach; but the changes were not due to the ferment. The charts showed that the most successful cases had been treated by limited amounts of carbohydrate diet varying with the needs and idiosyncrasies of the patient; in some cases the urine had become sugar-free, body weight was gained, and acidity diminished under a dietary where oatmeal was given up to 8 oz. per day.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

At a meeting on February 29th, Dr. Ernest Knight, President, in the chair, Mr. E. F. Finch, in a paper on the *Treatment of fractures*, based on an analysis of 200 cases of fracture of the long bones treated at the Sheffield Royal Infirmary during the five years 1906 to 1910, said that "setting" should be more often controlled by the skiagraph and *x* rays used more often in making a diagnosis, particularly in injuries in the neighbourhood of joints and in the carpus and tarsus. The functional result was more important than the anatomical, so the lines of strain and movements required must be kept in view rather than the anatomy. One should endeavour if possible to anticipate disabilities likely to occur after the injury, and to preserve the alignment of the bone. This latter point was of importance in the prevention of traumatic osteo-arthritis, which condition was present in 18 per cent. of the cases. All fractures of the vault of the skull should be subjected to operation. In the neighbourhood of the shoulder joints the treatment should be either by axillary pad or by extension with full abduction of the arm. In the elbow-joint region, the forearm should be first supinated fully and then flexed fully. Passive movement should be delayed for two weeks. Active movement could be allowed after the fifth day. Fractures of the shaft of the humerus were best treated by a double wedge splint. Colles's fracture should always be disimpacted, either by manipulation, wrench, or operation. The treatment of fracture of the femur up to 14 years, judging by results, was satisfactory. After this age the question of operation should be seriously considered. Fractures in the neighbourhood of the hip-joint were more common than was supposed, and gave rise to various degrees of coxa vara. In the neighbourhood of the knee-joint the results following treatment by extension were the best. Spiral fractures of the tibia must be operated on to get good results. In a Pott's fracture the backward displacement must be especially corrected. Mr. F. A. Hadley alluded to the disasters, due entirely to the method of treatment, which might occur when cases had to be dealt with under unfavourable circumstances in less than twenty-four hours. In such some of the older methods were the safest. In operative cases the surgeon often encountered difficulty, after reaching the bone, in doing anything useful. The greatest value of open operation lay in the removal of bone fragments and blood clot from the soft tissues. Very often simple suturing of the periosteum was all that was required. Plates so often had to be removed that he preferred to do without them unless they were absolutely necessary. Dr. D. Gray Newton showed a new truss for movable kidney designed and made on the cross action principle.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

At a meeting on February 21st, Dr. F. H. Jacob, President, in the chair, a discussion was held on the question, *Is the removal of glands in malignant disease worth while?* In opening it Dr. A. Stanley Green said that extensive operations, involving the removal of large glands and fascial sheaths, together with the original growth, were now the order of the day. Surgeons lost sight of their cases, but as a practitioner he was forced to the conclusion that a case was hopeless as regards permanent cure when enlarged glands were present. The use of a microscope in the operating theatre was not an infallible guide as to the malignancy or otherwise of a growth. The best results were obtained when the glands were not palpably affected; and when, as in the breast, the growth and glands could be removed in one mass the results were encouraging. But removal of the glands at a second operation was generally a futile procedure, because some of the lymphatic tracts were almost certain to be left between the two operations. When a further operation was performed for the removal of recurrent glands, the results were sometimes absolutely disastrous. Nevertheless operation offered at present the only known chance of cure, for *x*-ray treatment and radio-therapy were at best only palliative. Dr. F. H. Jacob agreed that *x* rays and radium only retarded growth. Mr. W. M. Willis thought that the whole operation for cancer of the breast should be reviewed, and that more consideration should be given to the duration of the disease and the size of the glands. Operation sometimes seemed to light up the cancer. In the oral region the enlargement of glands was often due to sepsis. Each region must be considered separately, and even where the glands were not felt to be enlarged, yet it was advisable to remove them. Dr. Sarah Gray said that removal of glands was less favourable in rapidly growing cancer than in more chronic cases. Mr. C. H. Allen remarked that formerly mere excision of the growth in epithelioma of the lip was considered sufficient, but better results were obtained by thoroughly removing the glands at the same time. Mr. W. T. Rowe thought that better results were obtained in tongue cases when the glands were removed as well as the growth; moreover, if recurrence did take place in these cases, it generally occurred in the internal organs and not in the glands. Mr. A. M. Webber agreed with the last speaker, and said that it was a benefit for the patient to be spared a hideous death from sloughing glands. Dr. C. H. Cattle said that epitheliomata were of a less malignant type of cancer than carcinomata; also that the glands were less affected in slow-growing cancers such as scirrhus of the breast. In his reply Dr. Green said that in his experience patients dying from internal secondary deposits suffered more than those whose glands had not been removed.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

At a meeting on March 7th, Mr. T. H. Ionides, President, in the chair, the following were among the exhibits:—Mr. H. H. Taylor: Two men on whom he had performed *Trephining of the sclera* for glaucoma with satisfactory results. Mr. G. Morgan: A girl of 6 years of age who showed a great enlargement of the external malleolus of the right fibula. Shortly after birth it was noticed that the right fibula at its lower end was larger than the left, but this had not been seen to make any progress till about six months ago. The swelling was not painful or tender, and there was no sense of yielding on pressure. The *x* rays showed a complete hypertrophy of the whole malleolus, and not an overgrowth of any one part as in an exostosis. The general opinion was that an exploratory incision should be made to ascertain its nature. Mr. G. Bate: A uterus removed for *Inveterate prolapsus uteri*. The interest of the specimen centred round the fact that fifteen years ago a double oöphorectomy had been performed for fibroid growth. The organ showed a complete

atrophy of the fibroid tissue. Mr. MALLAM: A *Parenchymatous goitre* in a man of 60; it had commenced when he was about 40 years of age, and had gradually increased till five years ago; since then it had remained stationary and was not causing any symptoms. The treatment had consisted in the administration of thyroid extract and painting with iodine, with no result.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

AT a meeting on March 8th, Professor A. BOSTOCK HILL in the chair, Dr. A. K. CHALMERS, in a paper on the *Relation of Local Authorities to the National Insurance Act*, said that that measure might be regarded as providing for a large part of the adult community of both sexes a scrutiny similar in its character to that which was already yielding hopeful results in the movement for the reduction of infant mortality and for the detection of disease among children of school ages. For the first time in our history an opportunity would be provided for obtaining information of the age incidence of disease during its currency, and this information could scarcely fail to carry with it a suggestion of methods for reducing the prevalence of disease generally. It would thus happen that in the future an importance would come to be attached to weekly returns of sickness similar to that at present accorded to weekly returns of deaths. He did not think that it was very apparent how any deficit in the amount available for medical benefits might arise, so that the probability was remote of the Treasury or the county or county borough authorities being called upon to make up such deficit. An important point for local authorities to consider was how far medical benefit was available for the treatment of infectious diseases, and he looked forward to a considerably increased demand on the hospital accommodation provided for the common infectious diseases of childhood when the opportunity arose for extending the additional benefits of the Act to the families and dependants of insured persons. Measles would have to be isolated for the prevention of sequelae, and whooping-cough to prevent its spread. The extension of sanatorium benefits to dependants would be an advantage to sanitary authorities, most of whom had displayed no eagerness in providing for consumptives the facilities of hospital treatment, the reason being that they were not yet convinced that as an administrative weapon it was a dominant factor in reducing the prevalence of tuberculosis. Referring to Section 63, which penalizes those sanitary authorities whose neglect can be shown to have caused excessive sickness, Dr. Chalmers expressed a doubt as to the practicability of putting it into force, among other difficulties being the impossibility of assessing a normal sickness rate. Dr. A. H. BYGOTT hoped that medical officers of health would dissociate themselves from any agitation against the Act and regard it as a first line of defence against disease. Dr. E. W. HOPE thought that every medical officer of health would welcome any measure tending, as the Insurance Act did, to improve the public health of the country. He doubted, however, whether it was possible to make more progress in the direction of improvement than was being made at present. Dr. R. A. LYSTER pointed out that as sanitary authorities had been deliberately kept out of the Act, they might make that an excuse for not doing anything which the Act enabled them to do. Mr. F. E. FREMANTLE considered that if county councils were to be consulted by the Insurance Committees then the proportion of county council representatives on the committee should be considerably increased. Dr. MCCLERY attached great importance to the preventive side of the Act, and was sure that, as more knowledge was gained of its provisions, it would be found by medical officers of health to be of considerable value. Dr. HERBERT JONES agreed that Section 63 might be found of great value in those districts where the authorities were reluctant to carry out sanitary reforms. Dr. E. H. T. NASH considered that, having dealt with the people in the mass, there was now an enormous amount to be done with individuals. He emphasized the importance of dealing with pre-tuberculous cases. Dr. BOSTOCK HILL feared that in rural districts there would be difficulties in administering the penal section of the Act. He agreed that the people would demand treatment, and it would have to be provided for them.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 1st, Dr. J. GALBRAITH CONNAL in the chair, Dr. LEONARD FINDLAY showed a case of *Myotonia* in a man; it presented no history of heredity nor of neurosis, but was in other respects a typical case of Thomsen's disease. Professor WALTER K. HUNTER read notes of a case which he described as one of *Elephantiasis* occurring in this country. The patient was a woman, aged 61, in whom swelling of the legs had begun about thirty years ago, subsequent to repeated attacks of erysipelas. For many years the swelling had been so considerable as almost to prevent walking, and ulceration had occurred in various parts of both legs. On admission to Glasgow Royal Infirmary in October, 1911, the patient suffered also from marked ascites with splenic enlargement, no apparent pulmonary or cardiac valvular disease, but slight albuminuria. Within the following four weeks the abdomen was tapped thrice, but on each occasion the fluid rapidly reaccumulated, and the patient died on November 26th. *Post-mortem* examination showed fatty degeneration of the cardiac muscle, dense perihepatitis and perisplenitis, great enlargement of the spleen, slight congestion of the kidneys, the capsules of which were adherent, and enlargement of the retroperitoneal glands. Microscopic examination by Dr. J. K. McNicol revealed marked multilobular cirrhosis and fine monolobular cirrhosis of the liver, thickening of the spleen capsule and trabeculae, catarrhal nephritis and hyperplasia of the lymph nodes of the retroperitoneal glands. Sections of the skin of the lower limbs showed hyperplasia of the subcutaneous tissue, but no thickening of the epidermis nor unduly fibrous condition of the cutis vera. Dr. J. A. WILSON, in a paper on *Keratitis as a cause of myopia*, analysed a series of 100 cases of corneal opacities; he found myopia in 69 per cent., and the average amount of myopia was a little over 3 D. The keratitis that produced the opacities was, with striking frequency, said to have followed measles. A few of the cases seemed to be due to ophthalmia neonatorum, and among those affected at an older age were some due to interstitial keratitis. In 21 cases there were opacities in one eye only, and of these 21 eyes 13 were myopic. In the 10 most pronounced cases in this section there was a total of 38 D. of myopia in the 10 nebulous eyes and only 1.5 D. of myopia in the 10 non-nebulous eyes of the same cases. The speaker then considered three possible ways in which alteration in the structure or mechanism of the eye might effect this result: (1) By stretching of the posterior segment of the globe as in ordinary myopia; (2) by increased curvature of the cornea; and (3) by yielding at the sclero-corneal junction. He found some evidence of change at the fundus; a fair proportion presented increased curvature of the cornea sufficient to account for the myopia, others presented slight increase, but not sufficient to account for the myopia, while others showed flattening of the cornea. There was also evidence in some cases of yielding at the sclero-corneal junction. The condition as a whole resolved itself into an inequality between the intraocular pressure and the resistance offered thereto. The treatment was discussed with this finding kept in view.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANAESTHETICS.

IN our report of the discussion regarding ether infusion anaesthesia (BRITISH MEDICAL JOURNAL, March 16th, p. 611), the accidental omission of a word entirely altered the meaning of a sentence which was intended to represent the views expressed by Mr. G. A. H. Barton. The opinion that he really expressed was to the effect that ether infusion anaesthesia offered, in ordinary cases, no better results than did scopolo-morphine and open ether. The point which he had more particularly in mind at the moment was the statement made by Mr. Rood that he had had practically no bad after-results in the 136 cases in which he had employed ether infusion anaesthesia. The claim on behalf of ether infusion anaesthesia represented by this statement could, Mr. Barton holds, be equally well made in respect of the scopolo-morphine and open ether sequence, for in his experience, since he began using this combination, after-effects have been almost abolished.

Reviews.

THYROID, PITUITARY, PINEAL, AND SUPRARENAL GLANDS.

E. VON CYON has published a book on the physiological importance of thyroid, pituitary, pineal, and suprarenal glands[1] which he dedicates to his old master in physiology, Edward Pflüger. The work commences with a prefatory chapter on the heart, the ear labyrinth, and hypophysis. The author then describes the details of a series of experiments carried out by him on the horse, dog, and rabbit to determine the function of the thyroid, pituitary, pineal, and suprarenal glands. These experiments were of a twofold nature. First, he injected into the vena jugularis a solution in glycerine or water of the active substance of the gland in question. Secondly, he exposed the gland and subjected it to mechanical pressure and electrical stimulus, noting carefully in each case the symptoms arising from such treatment and recording tracings of the pulse. Compression of the aorta was another method used to excite the gland. In the case of the suprarenal the experiments were limited to the injections. His conclusions are as follows:

1. *The thyroid gland* has a chemical as well as a mechanical function.

(*a*) It manufactures a substance (iodothyrin) which controls the nervous apparatus regulating the heart, and also, when present in the circulation, has the power of eliminating various substances from the organism which have a deleterious effect on the nervous system.

(*b*) The thyroid can also act as a protector against congestion of the brain in cases of suddenly increased activity of the heart or sudden contraction of the peripheral vessels. This power is due to its large vascular capacity, which permits it to control, to some extent, the circulation of the blood to the brain. Iodothyrin counteracts the paralysing effects of atropin and nicotin on the vagus.

2. *The pituitary gland* also acts mechanically and chemically. It is an autoregulator of the intracranial blood pressure, and acts in conjunction with the thyroid in guarding the brain against undue congestion. The glandular portion of the pituitary manufactures two substances, the most important of which the writer has named "hypophysin." This substance has the power of increasing the action of the heart. The injection of pituitary extract into the vein caused a diminution of pulse-rate with an increase of strength. At the same time the blood pressure rose. This condition would sometimes last for hours. This view regarding the blood pressure would seem to coincide with Schäfer's later views, but the author thinks that Schäfer has missed the important action of hypophysin in slowing the pulse-rate and increasing its strength. Schäfer's latest work on the subject of this gland, published in Bern, was written before he saw von Cyon's book. Hypophysin is also a powerful antagonizer to the action of atropin and nicotin on the vagus. It has not, however, the power of counteracting an already existing vagus paralysis caused by these drugs. Probably it can also protect the organism from poisonous products formed in the system. By means of its chemical activity, the pituitary regulates not only the sympathetic and vagus systems, but also the metabolism of the tissues and glandular secretion. Further, it influences powerfully the development and growth of the tissues, especially the osseous system. Destruction or removal of the gland means death to the individual.

3. *The pineal gland* acts for the most part mechanically only, and regulates the cerebro-spinal fluid flowing to and from the aqueductus Sylvii. To this end it works in conjunction with the pituitary. A very slight electrical stimulus caused the pineal gland to contract visibly without appearing paler in colour, so that the diminished size would not seem to be due to the contraction of blood vessels. The author ascribes it rather to the presence of striated muscle fibres in the gland, which he and others have observed. He noticed that these fibres were arranged in like manner to those of the heart.

4. *Suprarenal gland.* The injection into the vein of the active substance of this gland produced a marked excitation of the sympathetics of the heart and vascular system (accelerantes and vaso-constrictores), and paralysed the vagus and depressor: it must therefore be considered as antagonistic to iodothyrin and hypophysin. There was an enormous rise in the blood pressure, which von Cyon attributes to an excitation of the whole vaso-constrictor nervous system belonging to the cerebral centres, as well as of the ganglia of the rest of the vascular system. This is in contradistinction to Schäfer and Oliver's view that it is caused by direct stimulus of the muscles of the heart and arteries.

A number of graphic tracings are given, principally relating to the blood-pressure and the action of the heart, to illustrate the experiments.

Although the author is not treading altogether new ground, his book may be considered as affording a valuable confirmation of and addition to facts already described by other physiologists, especially with regard to the pituitary and pineal glands, whose actions have been less exhaustively studied by other workers. In addition to its scientific value, it may also have an important practical bearing on disease.

[1] *Die Gefässdrüsen als regulatorische Schutzorgane des Zentralnervensystems.* Von E. von Cyon. Berlin: Julius Springer. 1910. (Roy. 8vo. pp. 391; text figs. 117; Taf. 8. M.14.)

A HISTORY OF CANCER.

ONCE more the cancer lore and the cancer wisdom of all the ages is covered in the 1328 pages of this, the second, volume of WOLFF's monumental work, "Cancer from Early to Modern Times."[2] Whereas the first volume was general in nature, the present is special in that it treats of all the forms of the disease characteristic of the different parts of the body. The two volumes together form one of the most exhaustive, and certainly one of the very best, histories of the growth of the knowledge of a disease ever compiled. The reviewer has read it page for page from beginning to end with never-failing interest and admiration, but the duty has occupied him nearly a year, for it is a volume for consultation rather than for perusal as a textbook. It must, from its nature, become and long remain the standard book upon those aspects of cancer of which it treats, and should be upon the library shelves of every physician, surgeon, and pathologist who makes any claim to a scientific interest in malignant disease. It is impossible to review adequately, or even outline, the contents of a volume of such wide compass dealing not only with every possible and impossible hypothesis of the nature and cause of cancer as it affects the individual organs or different parts of the body, but also with the advance of knowledge as regards clinical course, diagnosis, and relative frequency. Even the recent submission of some of the problems of cancer to animal experiment comes in for review. While Dr. Wolff is throughout an impartial historian of the follies, errors, and real advances of the past, he at the same time suspends his judgement upon many matters, either because they are still subject to doubt and discussion, or too recent to permit of ultimate valuation.

Naturally the volume is not addressed to readers wishing to acquire elementary information, but presupposes a full knowledge of malignant disease both from the clinical and pathological standpoints, and to such readers who peruse it, or occasionally consult its pages, it must prove alike instructive and informing. The references to the literature number over 10,000, the author having himself consulted the original sources and verified them. The general arrangement in chief sections, each having several subsections, is admirable, as is also the printing of each chapter in numerous brief paragraphs. This arrangement, the exhaustive table of contents, and the full indices of names and subjects greatly enhance the value of the book, and facilitate ready reference. We can only endorse the high opinion formed on reviewing the first volume in the JOURNAL, May 7th, 1907, p. 1061, and wish Dr. Wolff the opportunity and the means necessary to complete the volumes he promises upon general statistics and treatment.

[2] *Die Lehre von der Krebskrankheit von den ältesten Zeiten bis zur Gegenwart.* Von Sanitätsrat Dr. Jacob Wolff. II Teil. Mit einer Abbildung im Text. Jena: Gustav Fischer. 1911. (Sup. roy. 8vo, pp. lxvi—1261. Price M.36; bound, M.39.)

THE HUMAN LABYRINTH.[3]

THE physiology of the human labyrinth to-day, quite as much as in the past, perplexes the philosopher, the moralist, and the scientist. It is somewhat elusive. Mr. SYDNEY SCOTT's monograph, entitled, *The Physiology of the Human Labyrinth*, deals only with the labyrinth of the human ear, which occupies an area in size no greater than that of an average monkey nut.

The compression of the title is symptomatic. Within a couple of dozen columns, measuring 5½ by 3 ins., Mr. Sydney Scott has compressed a remarkable amount of valuable information of a historical nature about the internal ear. He deals successively with the general anatomy and topography of the labyrinth, the early experimental researches on the cerebellum and the labyrinth, with the clinical physiology, the microscopic anatomy, the experimental physiology, with the observations in the human subject; with the effects of caloric, rotatory, and galvanic stimuli upon the organ; with the results of the ablation of one labyrinth, and concludes with an account of the cochlear system. This compression is doubtless explained by the fact that the monograph is a reprint of the Arris and Gale lecture delivered before the Royal College of Surgeons of England two years ago. The lecture, as a note at the end of the monograph states, was illustrated by lantern slides of photomicrographs, charts, and diagrams. Doubtless it was the intention of the author to republish his lectures as it was delivered. The introduction of some of the diagrams would have considerably assisted in making the lecture in print intelligible to a larger number of readers who are not otologists but are desirous of keeping in touch with the progress of otology.

Within recent years a considerable amount of research work has been done in order to throw light on diseases affecting the labyrinth of the ear. It is a most difficult subject to understand or to write about in a way that appeals to the average reader. In fact, it would seem that the reader must be not only an otologist and an anatomist and a physiologist, but also a physicist, in order to enter into the conflicting theories. It would be difficult to find a person combining all these qualifications, and this, perhaps, explains the useless controversies which have arisen. To the otologist Mr. Scott's summary of the work done within recent years will be of service, but to the general reader the work may not appeal, owing to the lack of expansion to which we have referred. The author has not made the most of his material, which represents a large amount of patient literary research. A few annotations would have been helpful. The general reader will find himself left to infer from the context the meaning to be attached to such a term as "dysdiadokokinesia" (Babinski). A few brief prefatory sentences indicating the aim, the scope, and the limitations of the lecture would have been of considerable assistance to the reader in following the argument. Monographs such as this are undoubtedly of great help to literary investigations and research; it is for that reason we have criticized the title, which should always be fully explicit of the contents of a monograph; but, apart from this criticism, we have nothing but praise for the work.

CHEYNE AND BURGHARD'S SURGERY.

THE first edition of CHEYNE and BURGHARD'S *Manual of Surgical Treatment*[4] was published in 1899, and although alterations have been made in the text of successive impressions, no new edition has appeared until the present just published. The authors have called to their assistance Mr. T. P. LEGG and Mr. ARTHUR EDMUNDS, to whom they express their obligations.

This textbook has obtained for itself a position of importance and popularity in surgical literature, and deserved the complete revision which has been given to it. It is hardly necessary to remind surgeons that it contains much more than a bald statement of methods of treatment. Some account is given in every case of the symptoms and pathology of the condition.

The first volume treats of infections, wounds, tumours, and deformities; in other words, of general surgery. We can testify to the complete revision of the text. Some alternatives in treatment which do not receive mention are worthy of the authors' consideration. In the application of skin grafts to an ulcer it is not essential to success that the granulations should be removed if the ulcer is healthy, nor is it necessary to cover the grafts with protective or any other impermeable material. A sterile gauze dressing left in position for five days is one of the simplest and best dressings. In discussing the treatment of perforating ulcers of the foot, the method of nerve stretching deserved mention. In the discussion of the treatment of tetanus the method suggested of using antitetanic serum is open to criticism. The authors advise a bilateral trephining in the frontal region, and the injection into the hemisphere of 5 c.cm. of the serum on each side. We were under the impression that surgeons had abandoned intracranial injections of the serum, and we are not acquainted with any clinical records which prove its superiority over that of injection into the spinal theca. Most surgeons would hesitate to inject 10 c.cm. of serum into the cerebral substance and submit the patient to bilateral trephining without strong evidence of the efficacy and necessity of the procedure.

The authors maintain the superiority of antiseptic methods in the treatment of operation wounds over aseptic technique. While there is no denying the excellent results which may be obtained by the antiseptic methods recommended there are two statements on page 153—first, that aseptic technique is "troublesome," and, secondly, that "the results obtained by it are not so good as that (*sic*) obtained by using antiseptics"—which we submit cannot be substantiated.

It is stated on page 100 that the iodine method of skin preparation possesses no advantage over carbolic acid and is "apt to leave the skin tender and easily irritated by the dressings, whilst it also leaves a collection of old epithelium beneath which bacteria may spread into the wound after operation." All and each of these statements is open to question. Some surgeons will also dissent from the writers in their use of wet towels around the operation area, in their leaving the forearm uncovered, and in their employment of 1 in 20 carbolic solution and 1 in 20 carbolic solutions containing one five-hundredth part of corrosive sublimate for disinfecting the hands. Many surgeons, we fancy, would fear that the skin of their hands would rebel after half a dozen or even fewer successive operations.

The new methods of treatment introduced in this edition are too many to enumerate. The description of intravenous injection of salvarsan is welcome, as also the method of using carbonic acid snow for naevi.

The chapter by Dr. Silk on anaesthetics and that by Dr. Emery on the examination of the blood are alike excellent. Dr. Emery's article contains more than its title suggests. It includes a description of Wassermann's reaction, and the use of vaccines including tuberculin.

"Cheyne and Burghard" is a household word among British surgeons, and the new edition will certainly add to the number of its admirers.

TEXTBOOKS OF CHEMISTRY.

THE preparation of a new edition of PERKIN AND KIPPING'S *Organic Chemistry*[5] has been made the occasion for a thorough revision of the whole work. The consequent increase of about fifty pages is not due to the introduction of new sections, but to the general extension of the text. The matter formerly given in an appendix is now amplified and included in the body of the book, which consequently contains five more chapters than formerly. Recent theories and nomenclature are given, and in a science which develops so rapidly as organic chemistry this is of much importance. This textbook is one of the best known and most widely used on the subject, and the new edition will maintain its reputation. Medical students will find it well suited to their requirements.

[3] *The Arris and Gale Lecture on the Physiology of the Human Labyrinth*, delivered before the Royal College of Surgeons of England on March 18th, 1910, by Sydney Scott, M.S., M.B.Lond., F.R.C.S.Eng. Reprinted from the *Lancet*, June 11th, 1910. Cambridge: W. Heffer and Sons, Limited. 1911. (Demy 8vo, pp. 24. 2s. net.)

[4] *A Manual of Surgical Treatment*. By Sir W. Watson Cheyne and F. F. Burghard. New Edition, entirely revised and largely rewritten with the assistance of T. P. Legg and Arthur Edmunds. Vol I. London: Longmans, Green, and Co. 1912. (Roy. 8vo, pp. 574; 222 figs. 21s. net.)

[5] *Organic Chemistry*. By W. H. Perkin, Ph.D., Sc.D., LL.D., F.R.S., and F. Stanley Kipping, Ph.D., Sc.D., F.R.S. Entirely new edition. Parts I and II. London and Edinburgh: W. and R. Chambers, Limited. 1911. (Cr. 8vo, pp. 695; figs. 26. 7s. 6d.)

Although the progress of research does not add accumulations of new facts to the domain of inorganic chemistry as rapidly as is the case in the organic branch of the science, recent years have seen great changes in the former, owing to the discovery and application of new laws, and there arises a need for textbooks in which not only the facts are up to date, but in which the whole way of dealing with the subject shall be in accordance with modern conceptions. In his *Textbook of Inorganic Chemistry*,[6] Dr. GEORGE SENTER has endeavoured to meet this want. The subject is dealt with from the elementary stage up to a point about corresponding with what is required for a B.Sc. degree, while much of the matter is necessarily the same as in older books; it is an advantage to have, for example, the principles of chemical equilibrium or the electrolytic dissociation theory kept in view in all the descriptions of reactions. The author states that in the arrangement of the matter he has been guided by his own experience as a teacher; the theoretical part is distributed throughout the book, each theory being discussed after the chief facts on which it is based have been presented. The matter is clearly put and the arrangement appears good. The book should prove thoroughly useful to students who do not wish to have to unlearn erroneous views obtained from books written from a point of view which later investigations have caused to be modified or abandoned.

NOTES ON BOOKS.

THE *Medical Register* for 1912,[7] which has been issued this week, contains 40,913 names, a net increase of 430 over the number in the volume for 1911. The number of names added by registration during the year was 1,042, and the number restored 81. The number of registrations in England was 530, in Scotland 339, in Ireland 173. These figures may be compared with the averages for the last twenty-four years and the last five as follows:

	Average for last 24 years.	Average for last 5 years.	1911.
Registrations—			
England	652	545	530
Scotland	467	409	339
Ireland	156	167	173
Total	1,275	1,121	1,042
Restored	87	104	81

These figures, of course, do not show the number of newly registered medical practitioners who have remained to practise in the three countries, nor the number who have entered the military services or settled in practice in the Dominions and Colonies or abroad. The number of names removed from the *Medical Register* during 1911 on evidence of death was 579, which is very near the average (575) for the last twenty-four years, but a good deal below the average (642) for the last five years. The number of names removed on ceasing to practise was 4, but the number removed under Section XIV of the Medical Act (1858) was 104. This is the section which authorizes the Registrar to remove the name of a practitioner if a letter of inquiry sent to his address on the *Register* remains for six months unanswered. That the number of names removed for this cause should have been so large is surprising, having regard to the fact that two contested elections for Direct Representatives of England and Wales on the General Medical Council took place in 1911. The report made by the Registrar in connexion with the election last November stated that at the election in May 365 letters were returned through the Dead Letter Office, but that eventually the number of practitioners with whom the Registrar failed to get into communication was only about 75; nevertheless, at the election in November 296 letters were returned through the Dead Letter Office. The number of names removed under Sections XXVIII and XXIX, which refer to names of members struck off the list of a licensing corporation or erased from the *Register* by the Council, was 6.

The Sixth Report on Plague Investigations in India, being Plague Supplement I of the *Journal of Hygiene*,[8] contains some very interesting papers, and is a continuation of the previous work done by different members of the Commission. Amongst other papers there is a very touching obituary notice of Major Lamb, I.M.S. It is sad to think that a man of such promise should have been carried off at the early age of 41; as the author of the notice says, the Indian Medical Service and science generally have been robbed of a most ardent worker. There are two papers on statistical investigations of plague in the Punjab by Mr. Greenwood, which should be very useful to workers at the subject in the future. In addition there are a valuable report on investigations into plague vaccines by Dr. Sydney Rowland, and further articles on fleas and rats.

[6] *A Textbook of Inorganic Chemistry.* By George Senter, D.Sc.Lond., Ph.D. London: Methuen and Co., Limited. 1911. (Post 8vo, pp. 593; figs. 90. 6s. 6d. net.)

[7] London: Published and sold for the General Medical Council by Spottiswoode and Co., Limited, New Street Square, E.C. (Price 10s. 6d.)

[8] Cambridge: At the University Press. London: C. F. Clay, Manager. 1912. (Imp. 8vo, pp. 206; plates 14. 7s. net.)

MEDICAL AND SURGICAL APPLIANCES.

Stethoscopic Chestpiece.

DR. LAURENCE M. ROUTH (London) writes: Occasion often arises when it is necessary to auscultate the back of the chest in the recumbent position without unduly disturbing the patient or to listen to the heart sounds at the apex without removing the corsets. Difficulty is then frequently experienced in putting the chestpiece of the stethoscope in position without allowing the rubber tubing to come in contact with the clothes. The accompanying woodcut shows a revolving chestpiece made for me by Messrs. Krohne and Sesemann. The bellpiece is capable of revolving through over 90 degrees on either side. In the position shown in the woodcut auscultation is considerably simplified when only a small space is available. The dotted line shows the normal position for ordinary purposes. The chestpieces can be obtained from Messrs. Krohne and Sesemann, Duke Street, W.

MEDICINAL AND DIETETIC ARTICLES.

Iodine Tubes.

WE have received from Messrs. R. Sumner and Co., Limited, of Liverpool, samples of their sealed tubes containing iodine and potassium iodide for the extemporaneous production of tincture of iodine. Tincture or solution of iodine is now used to a considerable extent as an antiseptic in various ways, and these tubes are intended to obviate the necessity of carrying about a liquid capable of doing much damage if spilt, and at the same time to ensure that the tincture is freshly prepared and of full strength. The tubes contain sufficient to make half an ounce or one ounce of the tincture on adding the contents to the requisite quantity of rectified spirit. It is suggested that they may also be used for preparing an aqueous solution for irrigation purposes; in this case, however, the strength of the solution appears to be less certain, since the amount of potassium iodide necessary to produce the official tincture does not suffice to make the whole of the iodine dissolve in water, and practical trial showed, in fact, that a portion of it remained unaffected.

Dry Emulsion of Cod-Liver Oil.

A preparation of cod-liver oil, with casein, carbohydrates, hypophosphites of lime and potassium, and other salts, in the form of dry powder, has been put on the market by the Eisner-Mendelson Company, New York, under the name "Decodol." Our analysis of a sample of this sent by the English agents, Messrs. Thos. Christy and Co., London, showed the presence of 29.3 per cent. of protein and 27.4 per cent. of fat. This combination is intended to be mixed with milk or other fluid when taken; experience will show how far this way of administering cod-liver and the other ingredients may be acceptable to children or invalids, but it can at least be claimed that the preparation consists of nutritive materials in a very concentrated form.

Salvarsan.

Arseno-benzol, or salvarsan, as hitherto supplied, requires a somewhat troublesome process of preparation before it can be administered. Messrs. S. Maw, Son, and Sons, London, E.C., agents for the preparation, have submitted to us a sample of a creamy suspension of the salvarsan in an oily medium, which is sold under the name Joha. It is contained in small sealed glass vessels, each holding 1.5 c.cm., this quantity containing 0.6 gram (10 grains) of salvarsan. The material is stated to be sterile and to keep indefinitely without deterioration.

Nova et Vetera.

ANATOMY IN SCOTLAND.

THE University of Edinburgh has long been the "sapient nurse" of anatomy. From its dissecting rooms have gone forth many teachers during the last century and a half, and at the present day chairs of anatomy in the United Kingdom and the Colonies are to a large extent occupied by Edinburgh men. It is not surprising, therefore, that the first Sir John Struthers Anatomical Lecture, delivered by Professor Arthur Keith in November, and now reprinted from the January number of the *Edinburgh Medical Journal*,[1] should be largely devoted to workers who made the Edinburgh School of Anatomy famous throughout the world. Professor Keith, who took for his subject anatomy in Scotland during the lifetime of Struthers, 1823–1899, points out that the lifetime of Struthers covers one of the most progressive periods in the history of human anatomy. When he began the study of medicine at Edinburgh in 1841 the majority of anatomists were followers of Paley, the theologian. The development of the human embryo was almost unknown; the body was supposed to consist of "textures" and "humours"; the deeper and more vital parts were supposed to lie beyond the surgeon's endeavour; fossil remains of man were unknown. Struthers lived to see all these things changed. One by one the anatomists became followers of Darwin; little by little the human embryo became known, and its stages modelled; under the microscope the "textures" were slowly resolved into vital units or cells. The discovery of anaesthetics and of antiseptic methods made even the deepest parts of the body accessible to the surgeon's knife and to direct investigation. From time to time discoveries were made of fossil remains which extended the origin of man further and further into the past. In short, a revolution had taken place in human anatomy, and in that revolution Scotland played a part, one of the foremost champions of the "new learning" being Sir John Struthers. In 1841 the Scottish anatomists were centred in Edinburgh. Only Berlin and Paris could show a group of workers who could stand comparison with the men then in the Scottish capital. In the university were Charles Bell, a "surgeon by profession but an anatomist at heart"; Alexander Munro, the third of his historic line; outside the university there were Robert Knox, Allen Thomson, and John Goodsir, who in that year was appointed conservator of the museum of the College of Surgeons. Professor Keith proceeds to give some interesting sketches of these men. Charles Bell, who died in the following year, had conducted a private school of anatomy in London, and had made a reputation as an anatomist by his discoveries in the nervous system. Professor Keith says:

> His merit lies not in making a reasonable guess as to the function of cerebrum, cerebellum, double nerve roots and double nerve supply, but that in having made this guess from his knowledge of human anatomy, he proceeded to test its truth on the bodies of other animals by dissection, and above all by experiment. His reputation as a discoverer does not rest on a quibble as to who discovered the exact function of the nerve roots, but on the fact that he was the first man that realized that the anatomy of our brain and nerves would be explained.

It may be interesting here to quote Charles Bell's letter to his brother George,[2] in which, while giving an account of the first dawn of his discovery in his mind, he summarizes his first series of experiments on the roots of the spinal nerves. Writing on March 12th, 1810, he says:

> I write to tell you that I really think I am going to establish my Anatomy of the Brain on facts the most important that have been discovered in the history of the science.
>
> You recollect that I have entertained the idea that the parts of the brain were distinct in function, and that the cerebrum was in a particular manner the organ of mind, and this from other circumstances than what I am now to detail to you.
>
> It occurred to me that as there were four grand divisions of the brain, so were there four grand divisions of the spinal marrow; first, a lateral division, then a division into the back and forepart. Next it occurred to me that all the spinal nerves had within the sheath of the spinal marrow two roots—one from the back part, another from before. Whenever this occurred to me I thought that I had obtained a method of inquiry into the function of the parts of the brain.
>
> Experiment 1.—I opened the spine and pricked and injured the *posterior* filaments of the nerves—no motion of the muscles followed. I then touched the *anterior* division—immediately the parts were convulsed.
>
> Experiment 2.—I now destroyed the posterior part of *the spinal marrow* by the point of a needle; no convulsive movement followed. I injured the anterior part, and the animal was convulsed.
>
> It is almost superfluous to say that the part of the spinal marrow having sensibility comes from the cerebrum; the posterior and insensible part of the spinal marrow belongs to the cerebellum.
>
> Taking these facts as they stand, is it not most curious that there should be thus established a distinction in the parts of a *nerve*, and that a nerve should be insensible? But then, as the foundation of a great system, if I can sustain them by repeated experiments, I am made, and a real gratification ensured for a large portion of my existence.

On December 6th Bell again writes to his brother:

> I am making experiments through the galvanic apparatus to try how far the action of nerves and muscles will agree with the divisions of nerves which I have made by dissection. The apparatus I use is very simple. I have a zinc probe and a silver probe. By placing these in contact with the nerve and the muscle and bringing their ends together, the part is convulsed. Now, you know, what I hope to prove is, that there are two great classes of nerves, distinguishable in function, the one sensible the other insensible!

Robert Knox is chiefly remarkable, not so much for his many valuable researches in human and comparative anatomy as because he was the chief agent by which a revolution was effected in the minds of Scottish anatomists concerning the nature of the human body. He had been a surgeon in the army, and when he retired he visited Paris, where he found Cuvier and Geoffrey St. Hilaire at the high tide of their fame. He learned to view the human body not as a special creation, but as part of that great plan on which Nature had fashioned all vertebrate animals. It was no longer the aim of the anatomist to discover the functional significance of parts, but to ascertain the plan on which the body was formed and the type from which its individual parts had been evolved. Knox scoffed at the orthodox school of Scottish anatomists, and when the tragedy of his life came and he had to leave Edinburgh under a cloud, it is to be feared there were few among his brethren who mourned his eclipse.

Munro Tertius held the chair of anatomy in the university for forty-eight years. He is generally said to have been a very dull man, who was content to read the lectures of his predecessors, sometimes with an undesigned comic effect. Dr. Keith shows that this judgement does something less than justice to the man, who had, in fact, outlived his period and did not move with the times.

Of the younger generation, only three come into the purview of Dr. Keith's lecture. These are Allen Thomson, Hughes Bennett, and John Goodsir. The others were John Reid, James Young Simpson, William Sharpey, T. Wharton Jones, Harry Goodsir, Hugh Falconer, Edward Forbes, Martin Barry, and W. B. Carpenter. All these except Allen Thomson were pupils of Knox. Sharpey founded the School of Physiology at University College, London, and influenced Michael Foster and Burdon-Sanderson, the founders of the Physiological Schools at Cambridge and at Oxford, and also Lister, whom he was the means of bringing within the sphere of Syme. Another of his pupils was Professor Schäfer. Wharton Jones was the teacher of Huxley—"the earliest and the best," as Huxley himself declared—and his influence may also be seen in some of the early researches of Lister on the circulation in the web of the frog's foot and on the early stages of inflammation.

Allen Thomson was the first in Scotland to take up the study of embryology, and forty years after the publication of his early work on the development of the human embryo His of Leipzig found his records among the few which had an abiding value. Martin Barry was the first who recognized the spermatozoa within the mammalian ovum and noted the first changes which follow fertilization. Like Francis Balfour, who was the greatest British embryologist of last century, Barry was a noted Alpine climber. Hughes

[1] *Anatomy in Scotland during the Lifetime of Sir John Struthers (1823–1899).* Being the first Sir John Struthers Anatomical Lecture delivered at the Royal College of Surgeons of Edinburgh, November 17th, 1911. By Arthur Keith, M.D., LL.D Aberdeen. Reprinted from the *Edinburgh Medical Journal*, January, 1912.

[2] *Letters of Sir Charles Bell, K.H., F.R.S.L. and E.* Selected from his correspondence with his brother, George Joseph Bell. London. 1870. Pp. 170, 171.

Bennett, though he did not introduce the microscope into Edinburgh, was the first in Scotland to realize that it was a powerful instrument of medical research, and essential for a right understanding of the structure of the body in health and disease. Although the centre of the movement of histological discovery was at Berlin, where Johannes Müller was then Professor of Anatomy, having among his assistants Schwann and Schleiden, the discoverers of the cell doctrine, Dr. Keith points out that the real pioneer was William Hewson, who taught anatomy in London with William Hunter in the eighteenth century. He adds that if Hewson was the pioneer in anatomical microscopy, the pioneer in embryology was William Harvey. Here, then, we have another example of what has so often happened in the history of science—that a movement begun in England was taken up and furthered in Germany and then reimported as a new thing into the country of its birth.

Unlike the men who have been mentioned, John Goodsir found his inspiration in his native land with his own eye and his own brain. He began his investigations by studying in the Firth of Forth the marine invertebrates, the animal forms which take the inquirer nearer the secrets of life. He made many discoveries, including the identification of sarcinae as a cause of vomiting, and the power of creosote to destroy them. When he was appointed to the chair of anatomy in 1846 he surveyed in his inaugural address the whole province of anatomy and the various periods of progress, but when he came to his own period, beginning with the introduction of the microscope in 1830, he confessed that the future progress of the science was obscure. Yet already movements were on foot which materially altered the course of anatomy. The first draft of Darwin's *Origin of Species* was written in 1841. Knox's specimens came into the possession of Struthers, who from the beginning was fascinated by the significance of vestigial or rudimentary structures. The supracondyloid process had been recognized by Knox in 1841 as the reappearance in man of a structure which occurred constantly in many animals. All through his life Struthers made observations on this process, issuing them as papers in 1848, 1854, 1858, and 1881. His inquiry opened out to him not only a series of new observations on the anatomy of the human arm, but he also realized that in this small and apparently insignificant thing lay hidden much of the past history of man, and that it could be read by him who had eyes to see. By 1863 he had become an adherent of the Darwinian movement.

Surveying Scotland at the close of the life of Sir John Struthers, Professor Keith points out how amazingly the study of the human body had progressed. Edinburgh still stood first, but Glasgow, Aberdeen, St. Andrews and Dundee had also become centres of anatomical research. When in 1889, after twenty-six years of strenuous life, Struthers retired to Edinburgh to renew his early associations, he had established at Aberdeen a fully-equipped school of anatomy, and inspired a band of young anatomists. In Edinburgh the University and Extramural Schools continued in their prosperity. Turner succeeded Goodsir in 1867, and by the end of the century he had become the father of the largest family of anatomists the world has ever seen. We need only mention Morrison Watson, who went to fill the chair of anatomy at Manchester; Sir James A. Russell, Inspector of Anatomy for Scotland; D. J. Cunningham—"a man framed in Nature's most liberal mood"; Cossar Ewart; Alfred H. Young, who succeeded Morrison Watson; Johnson Symmington, now Professor at Belfast; Arthur Thomson of Oxford, David Hebburn of Cardiff, A. M. Paterson of Dundee, and afterwards of Liverpool; Arthur Robinson, who now holds his chair; James T. Wilson of Sydney, Robert Howden of Newcastle, T. H. Bryce of Glasgow, A. W. Hughes of Cardiff, James Musgrove of St. Andrews, Edward Fawcett of Bristol, R. J. Berry of Melbourne, David Waterstern of King's College, London. Such a scientific progeny is in itself the highest testimony to Sir William Turner's energizing power as a teacher. The direction which research took among the anatomists of Scotland during the last four decades of the nineteenth century was determined by the ideals and traditions of Knox and of Goodsir, moulded and tempered by the discoveries of Darwin. From 1860 onwards the anatomists of Scotland came more and more under the influence of the evolutionary movement. Through the period 1860 to 1899 craniology was a subject of study and research at Glasgow, Aberdeen, and Edinburgh. Towards the end of the century Turner's memoirs on the osteology of the races of mankind began to appear, among them being the craniology of the people of Scotland, issued in 1903. By the end of the nineteenth century Scottish anatomists had begun to realize the necessity of making an anthropological survey of their own people and of seeking to analyse the various racial ingredients out of which the modern Scot has been evolved.

A survey of the work done in anatomy during the lifetime of Sir John Struthers shows that the study of form became more and more prominent while that of function came to have quite a secondary place. From the day he began to lecture on anatomy at the Edinburgh College of Surgeons in 1845 until his death in 1899 he fought continuously and courageously for freedom to teach and to investigate, for the progress of research and true knowledge and of medicine and medical education, for liberty of thought, for the rights of institutions, and for the rights of women. Professor Keith ends with an expression of his intellectual debt to Sir John Struthers and a kind of apologia for his own career. He says, for instance, that when he came to teach anatomy at the London Hospital he began to doubt whether his teaching of research was really the best to adapt students for their life work. "They had to deal with cases of appendicitis. I could not explain to them why the appendix was present in the body, nor why it was placed in the loin and shaped as a narrow blind tube. They saw cases of diseases of the antrum of the mastoid, and yet, although the shape and position of this small cavity could be described with accuracy, no hint as to why it was there and what function it served could be offered. They had to examine patients with the accessory chambers of the nose full of pus, but why such large air chambers should exist in man could not be explained. They daily saw children with enlarged tonsils or with adenoids, but we could not tell them why these structures were placed in the throat, nor give an explanation of their anatomy. They saw the gall bladder opened for the removal of gall stones, but I knew nothing of its functions nor of its anatomical meaning. They saw the prostate being removed for disease, but the reason of its existence in the human body was not thought of. Even with such vital and well-known organs as the heart and lungs, we could offer our students no satisfactory explanation of their shape, of the manner of their fixation, of the arrangement of their musculature, nor of the peculiarities in their nerve and blood supply." When, however, he became acquainted with the work of the anatomists who led the way at the end of the eighteenth century—the Hunters, the Munros, and the Bells—he found their efforts were directed to answer these very questions. While they studied anatomy to understand the meaning and function of the parts of the body, we at the beginning of the twentieth century were studying anatomy to describe form. It was men like Cuvier, St. Hilaire, and Lamarck who killed the study of function. The movement started by them, elaborated by Owen, and transformed by Darwin, became domiciled in Scotland for the greater part of the century. That movement was prolific in its result; it laid our knowledge of the human body on the sure foundation of comparative anatomy. Professor Keith says it seems to him that the time has now come to look to the future. In recent times the problems of human anatomy are yielding most readily to those who use the experimental method. The modern anatomist, if he is to help in solving the problem of the human body, must avail himself of the methods of the physiologist; he must study the living as well as the dead body. He has to seek assistance in embryology, in comparative anatomy, and in those experiments of which disease makes man so often the subject. Anatomists must reconsider their methods and their aims; they have to study function, which is the key to form.

The history of anatomy shows that it has passed through various stages. The eighteenth century workers sought to explain function by structure. Then came a school which concerned itself with form to the exclusion of function. Now we have to turn back and study function. For this study we are equipped with far more powerful means than the knife and forceps, which was all the Hunters and Bells had, and even the microscope, which

gave such an expansion to anatomical research. Now we have to use the full armoury of experimental research.

We have given here a mere outline of Professor Keith's interesting and suggestive address. We recommend all who are interested in the progress of anatomical science to read it for themselves.

THE BRITISH MEDICAL BENEVOLENT FUND.

THE annual meeting of the British Medical Benevolent Fund was held this year at the Mansion House on March 13th, on the invitation of the Right Hon. the Lord Mayor, Alderman Sir Thomas Crosby, M.D. Owing to his detention at the Guildhall, the Lord Mayor was unable to be present at the beginning of the meeting; the chair was, therefore, taken temporarily by Sheriff BRIGGS, who, after briefly initiating the proceedings, called upon the Treasurer of the Fund, Dr. Samuel West, to present the report and accounts, which had been distributed and were taken as read.

The Work of the Fund.

Dr. SAMUEL WEST then delivered an address, in the course of which he said that the objects of the Fund were, first, to make grants of money to distressed members of the medical profession, their widows and orphans; and, secondly, to provide annuities for such after they had reached the age of 60 years. The Fund was not a provident society—that is, not a society in which the benefits were limited to subscribers. It was a general charity; its doors were open without restriction to all qualified deserving cases, the only passwords being poverty and distress. The mode of application for relief was extremely simple. A letter to the secretary would bring a form, and the form, duly filled up, would come in ordinary course before the committee, and the grant, if the case were suitable, would be made. Due inquiry was made into all cases, but there was no publicity and no canvassing. But, of course, no canvassing meant the loss of a great opportunity of advertisement. Hence the Fund depended on its friends to make up for that want by an active propaganda among those who could help it. An indirect advantage of the Fund was that it acted as a great check upon imposture, since it made inquiries not only when applications for relief were made to itself, but also if desired when they were made to individual members of the profession. The cases of distress which came under observation fell into two groups—those in which the distress was of a temporary character and temporary relief was required, and those in which the causes were permanent; for example, old age or ill-health, so that the grant once given had to be continued, and practically amounted to an annuity. As soon as these recipients reached 60 years of age they passed automatically on to the annuity list, so that the Annuity Department of the Fund acted as a relief to its Grant Department. The annuities were paid from income on invested property. All the legacies of recent years had been invested and put into trust securities, and the income served to support 131 annuitants at the present time. The amount of each annuity was small—£20. It could not be raised above that sum owing to the operation of the Old Age Pensions Act. The Annuity Department was the backbone of the Fund, for, come what might, the annuities, at any rate, were provided for. The Grant Department was for the purpose of relieving those below 60 years of age, and into this department came many of the most distressing cases. A young medical man, for instance, was struck down by sudden illness, which killed him after lasting long enough to exhaust all the savings of the family. He died, and left a widow and children, without any fault of his own, unprovided for. The Fund stepped in and helped them. The grants made in such cases were unfortunately small—£12 or £18 a year—and it rested with subscribers to enable the Fund to make them larger. The Fund could not give more than it had got. It did not hoard up money, but could not run into debt. How much it could give in any particular year depended on how much it could get in the way of subscriptions and donations. In short, the Grants Department was a constant source of anxiety to the committee. At the present moment there was a balance in hand, because subscriptions came in just now; but in the lean months of the year—July, August, September, and October—they very often had no money at all. It had happened more than once in the last few years for the committee to find a long list of distressing and deserving cases, and not only to have no money in the bank, but an actual deficit. The third department of the Fund was the Guild, which owed its origin practically to Lady Tweedy, and was the ladies' branch of the Fund. The Fund gave money, and the Guild gave much else. It had only been established two and a half years, but had made very satisfactory progress. It began its work by supplementing the grants made to beneficiaries with clothes and boots and help in sickness and emergency. Last year it was able to give a short holiday to some who required it. The special direction in which it was developing was that of education and training. A concert was given which was most successful, and provided the means of purchasing two presentations for boys to St. Anne's School. Other children and young people had been helped by schooling and training, by which means they would be placed in the position of earning their own livelihood afterwards. This was the best investment of charitable money, for it enabled the beneficiaries to become self-supporting, and to preserve their independence and self-respect. In respect to financial administration, the accounts of the Fund were strictly audited every year by chartered accountants, and the working expenses only just exceeded 5 per cent. There were very few charities which could say the same. Dr. Samuel West then ended his address as follows: Let me, in conclusion, say that, from intimate knowledge and personal experience now extending for many years as treasurer, I can vouch personally for the excellent work that the Fund is doing. On the ground of the necessity—the absolute need for such a Fund as this, and the excellence of its work and the economy of its administration, and on the soundness of its financial position—I feel that I can appeal with confidence for increased support, not to the profession only but also to the public, to whom the profession renders such great, and often undervalued, services.

Adoption of the Report.

The adoption of the report was moved by the Right Rev. Bishop BOYD CARPENTER. The privilege of doing so was, he indicated, one which he had a right to accept, because, apart from the fact that everything concerned with humanity had a right to appeal to those belonging to his own profession, there was a kind of freemasonry and interdependence between the three learned professions. How this came about was then described in a very interesting speech which included a consideration both of the characteristics differentiating the learned professions from other occupations and of the circumstances which place professional men at a certain disadvantage as gainers of their livelihood in a world which for the most part conducts its affairs on strictly commercial principles. It was true that there had been great lawyers who had amassed large fortunes, and it was true that there had been great physicians who had died wealthy men, but it was not true that the average lawyer made a great fortune, and still less was it true that the average medical man was able to make anything approaching a fortune. His was not an occupation in which money was the end, nor as a rule did it tend to the amassing of money. A man starting a medical career started it with the handicap of an expensive education, and with a risk very much like that of which a captain of a ship must be conscious when commencing a voyage. Many of those present must have remembered when travelling by sea how thin was the separating wall between themselves and the vast destructive ocean, and many a doctor must have often said to himself "how thin and frail is the wall which separates me from disaster and misfortunes." It was only necessary to consider a few of the stories outlined by the record of "cases helped by the Fund" for his auditors to understand what he meant. The medical profession stood for the greatest good which one man could do for his neighbour; it stood, in short, for service—service nearly always rendered with a spirit of devotion, kindliness, and patience. Therefore, my friends, the Bishop concluded, I commend with all the warmth I can to your generosity to-day the cause of this medical charity. It means that we are ready to show that we recognize that the men who have been working for our health are those who ought to have from us some con-

sideration, some care, some generosity, yes, I was going to say liberality and gratitude, shown to them in their later years and in their dark hours.

Sir T. CLIFFORD ALLBUTT, in seconding the motion for the adoption of the report, expressed the general appreciation of the eloquent and interesting way in which Bishop Boyd Carpenter had laid before the meeting not only the claims of the medical profession, but also its merits; he had done so in a fashion which for more than one reason could not well be imitated by any of those who were themselves engaged in the practice of medicine or surgery. Still, he himself, as one engaged chiefly in consulting work, might speak a little more freely than could any one engaged in the rough and tumble of general practice. It would, perhaps, not be unfair for him and for others in the same position to express their very strong feeling of the honour and self-devotion of their colleagues in general practice, especially those in the humbler kinds of general practice; they brought talents of a high order to bear upon work which was somewhat thankless, but which nevertheless they performed devotedly, knowing that they had other duties of a higher kind in which they would find their reward. The speaker confirmed what the Bishop had said as to the expensive nature of a professional education, and pointed out to what a great extent the conduct of practice depended upon the presence and acts of the medical practitioner himself, whereas in other professions the work could be largely deputed. This fact made the practice of medicine an occupation of a particularly trying kind. He also pointed out how great were the difficulties lying in the way of a medical man insuring himself adequately if he had at the same time to provide for a family and for the education of his children. Many had so far looked to the sale value of their practices as a kind of insurance, but recent events had probably rendered many, if not most, practices, unsaleable. He recorded some experiences of his own in connexion with a society of the same kind in the West Riding of Yorkshire, and stated that they had impressed upon him how extremely important it was that there should be a fund sufficiently large to give reasonable assistance to medical men unexpectedly overcome by long illness or death. They had also impressed upon him the tenderness with which the investigations necessary should be conducted, and for that reason he was especially glad to hear of the Guild now working in connexion with the British Medical Benevolent Fund. Ladies could form a just estimate of the sort and amount of assistance that was required in any case given probably better than any one else. Finally he pointed out that those who gave to the Fund could be certain that they would do no harm thereby. When one asked people to give money to this or that object, they said, quite properly, that they must consider the matter very carefully, because in so many cases if one did a certain amount of good there was yet a fear of doing harm indirectly by giving doles; but, concluded Sir Clifford Allbutt, "it may be safely said that every sovereign that is given to this society does its full measure of good; not a 6d. of it does harm to anybody, so conscientiously and economically is it managed. I am sure that on account of the personal supervision which is given every sovereign is worth 30s. or even two sovereigns, because money could not be given for a better cause or for a higher purpose."

Sir THOMAS BARLOW also spoke in support of the resolution. It was, he said, perfectly well known to everybody who knew anything at all about medical practice that medical men at every stage did an enormous amount of work, especially for the poor and for those who were on the border-line—work which brought no remuneration. It might be admitted that such work did the medical man good, since it gave him experience; but if the public in general profited by that experience, surely it was fitting that some return should be made. As for the work done by the Ladies' Guild it was the keystone of the arch of the Fund's work and enabled the ground to be covered much more effectively and completely than when only doles were given. There was then no finality in the work, but now the Guild found out exactly where the shoe pinched and where the need was, and immediately and without the smallest delay set the wheels going to try and put things right. Some of the ways in which the Ladies' Guild helped were so very homely that one was ashamed to speak of them, and yet one had no business to be ashamed because the results made up the sum total of the ordinary comforts of life. In short, the Guild was doing its work judiciously, thoughtfully, and economically, and in the closest possible relationship with the other departments of the Fund. Those who subscribed could, as Sir Clifford Allbutt had said, be certain that their money would be well administered. The working expenses had been reduced to the very minimum, and the amount of conscientious, thoughtful, and kindly services put into the work of the Fund was beyond all praise.

The Right Hon. the LORD MAYOR then put the resolution. It needed no words of his, especially after the brilliant appeal by Bishop Boyd Carpenter, to commend the subject to the careful attention of those present. "There can be no doubt," he said, "that the medical profession is called upon to do a great deal of work immediately, on emergency and otherwise, and all for nothing. I know of scarcely any other profession undertaking such a duty."

The report was then unanimously adopted.

Vote of Thanks to the Lord Mayor.

A vote of thanks to the Lord Mayor was then moved by the PRESIDENT OF THE FUND (Sir John Tweedy). It was the first time that a meeting of the Fund had been held at the Mansion House, though not the first time that the Fund had had the benefit of the support of a lord mayor, for three years ago, when the annual meeting was held at the College of Physicians, Sir George Truscott, the Lord Mayor at that time, made a very powerful and sympathetic appeal to the public to support the Fund. Speaking of the present, Sir John Tweedy congratulated Sir Thomas Crosby on the high distinction which he had attained in the City of London. He has been raised, he said, to the Chief Magistracy of this great city; and he has attained this eminent municipal and civic distinction as a hard working doctor. There are many members of our profession who attain distinction in other walks of life, but, unfortunately, it is generally found that they have given up their profession in order to follow these other walks. Sir Thomas Crosby, however, saw patients to my certain knowledge, to within a day or two of his taking up the office of Lord Mayor. Sir John Tweedy also made allusion to Lady Crosby. A few weeks ago she had taken the chair at a meeting in the West End, at which was inaugurated a movement likely to prove of the most valuable kind. This was to organize the administration of the Guild's work throughout the various divisions of the metropolis. Progress had already been made, and before long London ladies would, he had no doubt, have removed from London an existing reproach, that is, that up to the present time the Fund had not in London done as much as had been done in some extra-metropolitan cities, like Liverpool and Edinburgh.

The vote of thanks was seconded by Mr. RICKMAN GODLEE, who in the course of his remarks said that it would be a good thing if people not only revised their wills from time to time, as they were urged to do by the community to which he belonged, but if they also revised their subscription rates. At any rate that was what he himself, who hitherto had only been a comparatively small subscriber, intended to do forthwith after what he had heard that afternoon, and he hoped that others would do likewise.

The vote of thanks was then put by Sir JOHN TWEEDY and carried unanimously.

In acknowledging the vote, Sir THOMAS BOOR CROSBY said that he could endorse very well all that had been said by every previous speaker. He could speak, too, of the labours of professional work in his own early days. "The last time I spoke of them was in addressing an audience of many hundreds of young cadets in the Guildhall, and it crossed my mind to say it—and I will say it to you now—that in my early days I worked seven days a week, and frequently one or two nights. What do you trades union people and public agitators think of that? I threw down the challenge then, but the gauntlet has not yet been taken up." There was one thing which made the underpaid profession of medicine palatable to those who worked therein: that was the mental satisfaction which came to a man when he saw that he was being successful in the treatment and management of some dire disease. That alone had many and many a time consoled the speaker for hours and hours spent out of bed. It was a grand point

in medical work, and helped thousands and thousands of medical men to bear the burden of their tasks without grumbling.

The meeting then terminated.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

SOOTHING SYRUPS FOR INFANTS.

In a previous report the results of the analysis of various proprietary "teething powders" for infants were given. "Soothing syrups" also are very largely used, and are probably purchased usually as "syrup of aniseed," etc., or compounded in accordance with some domestic recipe. There are, however, a certain number of proprietary preparations of this class which have a large sale. The following are reports on a selection of such preparations.

MRS. WINSLOW'S SOOTHING SYRUP.

This much advertised preparation is supplied by Curtis and Perkins, New York and London, at 1s. 1½d. per bottle, containing 1½ fluid ounces.

In a circular enclosed in the package it is stated that:

Mrs. Winslow's Soothing Syrup, for children teething, greatly facilitates the process of teething, by softening the gums, reducing all inflammation,—will allay ALL PAIN and spasmodic action, and is SURE TO REGULATE THE BOWELS. Depend upon it, mothers, it will give rest to yourselves, and RELIEF AND HEALTH TO YOUR INFANTS.

We have put up and sold this article for over sixty years, and *can say in confidence and truth*, of it, what we have never been able to say of any other medicine—NEVER HAS IT FAILED, IN A SINGLE INSTANCE, TO EFFECT A CURE, when timely used. Never did we know an instance of dissatisfaction by any one who used it. On the contrary, all are delighted with its operations, and speak in terms of highest commendation of its magical effects and medical virtues. . . .

This valuable preparation is the prescription of one of the MOST EXPERIENCED and SKILFUL NURSES in America, and has been used with *never failing success*, in THOUSANDS OF CASES.

The following statement appears on the label:

This Preparation contains no Poisonous Ingredient and may be used with Perfect Safety.

A few years ago, however, the package used to bear a statement that "this preparation contains, among other valuable ingredients, a small amount of morphine," and the presence of morphine to the extent of about 0.08 grain per bottle was proved in court in cases where unqualified persons were prosecuted for selling the syrup. The labels now in use do not contain any such statement, and the analysis shows that morphine is not now present. But the extracts quoted above, as to the article having been sold for sixty years, and to the prescription of a nurse, are such as would lead any one to suppose that its composition is now what it has always been.

The directions on the label are:

For a child under one month old, 6 to 10 drops; three months old, half a teaspoonful; six months old and upwards, a teaspoonful three or four times a day. For Dysentery, repeat the above dose every two hours, until the character of the discharges is changed for the better.

The syrup was of a straw colour, and flavoured with aniseed. Analysis showed it to contain, in 100 parts by measure:

Potassium bromide	...	2.0 parts
Alcohol	...	4.3 parts by measure
Essential oil (anise)	about	0.1 part
Sugar	...	56.5 parts

Emodin was present in small quantity. This substance may be derived from several drugs—for example, senna, rhubarb, cascara sagrada, etc. The evidence which was obtainable pointed to senna as the drug from which it was derived in the present case. A syrup containing 1.2 per cent. (by measure) of the syrup of senna of the *British Pharmacopoeia* was of the same depth of colour and showed about the same proportion of emodin, and agreed in other respects also. No alkaloid was present. The essential oil may have contained a little oil of dill or caraway, the quantity being far too small to be separated. There was some evidence of about 2 per cent. of glycerine, but in presence of so much sugar this could not be positively proved.

WOODWARD'S GRIPE WATER.

This preparation is supplied by W. Woodward, Limited, Nottingham, at 1s. 1½d. per bottle, containing 5 fluid ounces. It is thus described on the label:

Woodward's Celebrated Gripe Water, or Infant's Preservative, without Laudanum, for all disorders of children, viz.: Convulsions, Gripes, Acidity, Flatulency, Whooping-Cough, and the distressing complaints incidental to Infants at the period of Cutting their Teeth, allaying the pain, giving instant relief, and rendering this crisis perfectly mild and free from danger.

The directions are:

For an infant, half a teaspoonful; two months old, one or two teaspoonfuls. The dose may be gradually increased.

Analysis showed it to contain, in 100 parts by measure:

Sodium bicarbonate	...	1.08 part
Essential oil	about	0.03 ,,
Alcohol	...	3.8 parts by measure
Sugar	...	20.5 parts

No alkaloid was present. The essential oil appeared to be chiefly oil of caraway, with a little oil of dill, and possibly also of anise.

ATKINSON AND BARKER'S ROYAL INFANTS' PRESERVATIVE.

This mixture is supplied by Robert Barker and Son, Manchester, at 1s. 1½d. per bottle, containing 1½ fluid ounces.

In a circular wrapped round the bottle, this medicine

Is recommended to all Parents, Nurses, and others, who are entrusted with the management of Children, as a Medicine of real and approved efficacy, in preventing and removing those disorders to which Children in their early infancy are most liable, principally proceeding from a redundancy of acidity in the first passages, as Wind, the Watery and Dry Gripes, Convulsions, the Frog, &c., to which so many children fall victims, but which may in general be prevented by the use of this Medicine. It is also happily calculated for allaying those excruciating pains which Children suffer in Cutting their Teeth, and will, by being judiciously used, render this operation of nature perfectly mild and free from danger. It is also equally efficacious in many other disorders to which Children are liable, as the Rickets, Whooping Cough, Measles, &c. . . .

The directions as to dose are:

Children up to a month	...	5 to 10 drops in warm water
,, 1 to 3 months	...	10 to 20 ,,
,, 3 to 6 months	...	20 to 30 ,,
,, 6 to 12 months	...	60 drops, or small teaspoonful
,, 12 mths to 3 yrs	...	100 ,, or moderate-sized teaspoonful

Analysis showed it to contain, in 100 parts by measure:

Potassium bicarbonate	...	1.75 parts
Magnesium carbonate	...	5.45 ,,
Essential oil	about	0.06 ,,
Alcohol	...	7.0 parts by measure
Sugar	...	9.9 parts
Colouring matter	...	trace

No alkaloid was present. The essential oil appeared to contain oils of caraway, dill, anise, and almond. The colouring matter did not appear to be of vegetable origin, but showed a yellow colour in alkaline and a pinkish in acid solution, thus agreeing with certain coal-tar dyes.

MRS. JOHNSON'S AMERICAN SOOTHING SYRUP.

This syrup is now supplied by Barclay and Sons, Limited, London; according to statements in a circular accompanying the bottle, it was formerly made by a Mrs. Jane Johnson. A 1s. 1½d. bottle contained about 70 minims.

It is stated in the circular that

This remedy has given relief to thousands of children when suffering from the pains of teething. As soon as the Syrup is rubbed on the gums the child will recover, being as innocent as efficacious, and so pleasant that no child will refuse to let its gums be rubbed with it. When infants are at the age of four months, though there is no appearance of teeth, one bottle of the Syrup should be rubbed on the gums to open the pores. Parents should never be without the Syrup in the nursery where there are young children; for if a child wakes in the

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 530, 1653; 1908, vol. i, pp. 833, 942, 1373; vol. ii, pp. 86, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i, pp. 31, 909, 1128; vol. ii, p. 1419; 1910, vol. i, pp. 151, 213, 393, 1005, 1063, 1120; vol. ii, pp. 982, 1350, 1928; 1911, vol. i, pp. 26, 91, 823, 1324; vol. ii, pp. 32, 77, 456, 767, 854, 1543; 1912, vol. i, p. 26, 141, 318, 438.

night with pain in the gums, the Syrup immediately gives ease, by opening the pores and healing the gums, thereby preventing Convulsions, Fevers, etc.

The directions on the label are:

Rub the gums with the Syrup two or three times daily for several minutes.

The syrup was of a deep reddish-yellow colour, and had a strong flavour of saffron. Analysis showed it to contain in 100 parts by measure:

Sodium chloride	5.66 parts
Hydrochloric acid (*B.P.*) ...	2.33 parts by measure
Reducing sugars, calculated as glucose	66.6 parts
Extractive, colouring, etc., about	5.0 ,,

A little alcohol was present, but the amount was not determined. The reducing sugars appeared to be present in the form of honey, representing about 85 parts of this; the extractive was partly derived from saffron, and would include the non-saccharine constituents of the honey.

REPORT OF THE VIVISECTION COMMISSION.

RESERVATION MEMORANDUM.

A BRIEF summary of the Report of the Royal Commission on Vivisection was given in the JOURNAL of March 16th. It was there stated that the report was signed by Colonel the Right Hon. A. R. M. Lockwood, C.V.O., M.P., Sir William J. Collins, and Dr. George Wilson, subject to reservations contained in Memoranda. One of these is signed by the three members of the Commission just named; a further "reservation memorandum" is submitted by Dr. George Wilson. We can only find space for an abstract of the former of these documents in this number of the JOURNAL; we hope to deal with Dr. Wilson's Memorandum in a later issue.

Colonel Lockwood, Sir William Collins, and Dr. Wilson begin by saying that it was not until almost the last sitting of the Commission that it became manifest that there were certain matters upon which they were unfortunately not in agreement with their colleagues.

A cleavage of opinion was then disclosed in regard to some points upon which there had been previously reason to believe that, even if unanimity were unattainable, a majority of the Commission might have been found to be in agreement.

They go on to say:

We have signed the foregoing report, in the preparation of which we have borne our part—even though we could have wished that some portions of it had been differently expressed—and we have endeavoured to limit as far as possible the reservations which we are now compelled to make.

There are, however, certain conclusions and recommendations of a fundamental nature upon which we find it impossible to concur with our colleagues, and in reluctantly withdrawing our support from them we must leave these particular conclusions and recommendations to rest only on the authority of a bare quorum of the Commission. We believe that, for the reasons which we shall proceed to adduce, the conclusions and recommendations which we support are not only warranted by the weight of evidence but are more in harmony with the whole trend and tenour of the Report, which we have signed, than are those which have received the approval of our colleagues.

The two main points upon which they dissent from the report are, first, as to securing by statute that undivided responsibility of the Secretary of State which was recommended by the previous Royal Commission, but which the Act of 1876 failed to establish; and, secondly, as to placing a statutory requirement upon an experimenter painlessly to destroy an animal which has been experimented upon when obvious suffering has supervened. Both points lead up to and in their opinion necessitate amendments of the law.

Amendments of the Law.

They state that by their reference they were directed to report not only upon the practice of vivisection but also "whether any and if so what changes are desirable" in the law relating to experiments on living animals and its administration. They think that the evidence received calls for a wider review and more critical examination of the provisions of the Act of 1876 as well as for more extensive modifications thereof than are involved in the suggestions and recommendations offered by their colleagues.

They think that the weight of evidence is opposed to the view that only administrative modifications are required in order to give effect to the changes which experience proves to be desirable, and, indeed, they doubt whether even such modifications as are suggested in the report can be adequately carried out without legislation. They add that the report justly states that there was "a considerable conflict of opinion" as to the working of the present Act, but with the exception of two or three witnesses, they cannot recall any of those who appeared before the Commission who expressed unqualified satisfaction with the provisions of the present Act, and the procedure thereby entailed. Criticism of the statute proceeded alike from those who are in favour of and those who are opposed to experiments on living animals for scientific purposes. Due weight is given in the report to the change of medical and scientific authority, as exhibited in evidence, in regard to the practice of vivisection. Not less remarkable, however, they say, is the change which has taken place (so far as they could judge from the evidence received) in the attitude of such authority towards the desirability and practicability of legislation for the control and regulation of the practice. Thus, before the Royal Commission of 1875, Lord Lister considered such legislation to be superfluous, and felt that it would be a blot on the profession. The late Sir Michael Foster saw no necessity for legislation. The late Sir J. Burdon-Sanderson held a similar view; he deprecated inspection as being liable to lead to a spirit of opposition, or as tending to concealment; and, further, he believed that no inspection would give any guarantee whatever as to what happened when the Inspector was not present. Other medical and scientific witnesses before the previous Commission similarly objected to legislation as being unnecessary or impracticable.

Colonel Lockwood, Sir William Collins, and Dr. George Wilson proceed to say:

Such fundamental objections to legislation for the restriction and control of vivisection were, however, not largely held by the majority of those favourable to the practice who appeared before us. It is true that Dr. (now Sir William) Osler, who had had experience in the United States of America, where there is no legislative restriction, as well as in this country, felt "that the matter could be left safely in the hands of the men who are in charge of the physiological laboratories and the scientific men of this country," and regarded legislative restriction as "a standing insult to the humanity of these men." Dr. Pembrey held that "the limitations of the Act are against research," and Sir Lauder Brunton regarded the present law to a certain extent as a stop to science. Criticism of the present law of a less fundamental character, however, was vouchsafed by numerous witnesses. Dr. Starling, while not advocating abrogation of the Act, yet complained of the complicated list of different certificates and licences required under the present law. Professor Langley criticised the complicated character of the statutory certificates and suggested amendments in the Act. Dr. Dixon, while thinking some legislation and a system of licensing desirable as giving security to those who practise vivisection and to the public, was nevertheless desirous of abolishing all certificates, thus simplifying the present complicated system, and can hardly be cited as in favour of the Act as it is. Dr. Cushny's satisfaction, too, was tempered by a desire for some alteration of the statutory requirements in regard to certificates.

While Sir Henry Morris, it is true, would be satisfied with small amendments of the Act, Sir Victor Horsley, though agreeing with Lord Lister that the Act is superfluous, nevertheless, in deference to the public demand, approved of a system of licensing by the Home Secretary and of the registration of places where experiments are carried on. He, however, objects altogether to the present system of statutory certificates, which he regards as so faulty that it should be abolished. He suggested a simpler form of application for licence, and made numerous proposals for amending the Act, the drafting of which he considered to betray ignorance of physiological conditions. Sir John Bradford held that the statutory certificates gave rise to grave misconception in the minds of the public as well as inconvenience to experimenters and was in favour of simplification. The Inspectors under the Act, Dr. Thane, Sir J. Russell, and Sir Thornley Stoker themselves proposed specific amendments, and Sir J. Russell stated that licensees have great difficulty in understanding the law especially in regard to certificates.

In view of the "adverse criticism" to which the Report justly admits the present system to be open, and to the strictures passed upon it by those familiar with its working, we are unable to agree with our colleagues "that inasmuch as the present system, according to the judgement of the majority of those witnesses who possessed the knowledge and the opportunity for forming a trustworthy opinion on such a point, has on the whole worked efficiently, no change is necessary or desirable."

The Report further shows that among opponents of vivisection there was not less diversity of opinion in regard to the present law, some advocating statutory prohibition of vivisection altogether—others a repeal of the existing Act. Others again suggested amendments of the Act of 1876, with a view to obtain greater protection for animals by additional inspection and

otherwise, but none approved of the scope and provisions of the Act of 1876.

The Report sets out the reasons for thinking that valuable knowledge has resulted and may result from experimental investigations on living animals. We have after weighing the ethical and moral considerations stated our view that such experiments, adequately safeguarded by law faithfully administered, are justifiable and should not be prohibited by legislation. We have considered the suggestion of leaving to the operation of the ordinary law, as now amended and consolidated by the Protection of Animals Act, 1911, cases of alleged cruelty in connection with medical, physiological and scientific investigations—that is to say, the repeal of the Act of 1876. After much deliberation we think that in the interests of the animals themselves, even apart from other considerations, some form of special legislation is on the whole desirable.

Undivided Responsibility of the Secretary of State.

Under this head it is pointed out that the Royal Commission of 1875 recommended that only persons licensed by the Secretary of State should be permitted to experiment upon living animals, and that such licensees should be bound by conditions whose object should be to secure that suffering should never be inflicted in any case in which it could be avoided, and be reduced to a minimum where it could not be avoided altogether. All such experiments, whether for original research or for demonstration, were to be under the control of the Secretary of State, and they added: "We think it is inexpedient to divide the responsibility of the Secretary of State with that of any other persons by statutory enactment."

Colonel Lockwood, Sir William Collins, and Dr. Wilson state that, agreeing as they do with these recommendations of the previous Commission, they regret that the Act of 1876 failed to give effect to them. That Act did not receive very prolonged parliamentary consideration. The bill was read a second time in the House of Commons on August 9th, and passed through its subsequent stages, including the Royal Assent, by August 15th. It introduced a dual jurisdiction in regard to the permits to be granted to experimenters upon living animals. After enacting certain provisions with regard to the use of anaesthetics, demonstrations to students, killing the animals before the return of consciousness, repetitions of experiments, and the use of certain domesticated animals, the Act proceeds to provide for the waiving of all these restrictions on the strength of statutory certificates granted, not by the Secretary of State, but by the holder or holders of certain specified offices in scientific or medical institutions mentioned in the Act. As Sir William Byrne, of the Home Office, put it, "That is the framework of the Act—to lay down a number of very strict conditions, and then to allow all except three to be removed by certificate." There was thus, they say, introduced into the Statute the intervention of certain outside authorities in derogation of the undivided responsibility of the Secretary of State. They think that the distinction between *Licences—granted by the Secretary of State* and subject to all the restrictions in the Act, chiefly for the protection of animals, and *Certificates—granted by the scientific authorities* which waive the aforesaid restrictions—needs to be accentuated. It is true that the Secretary of State may disallow or suspend any certificate at any time, but unless he intervenes within one week after the certificate signed by the scientific authority or authorities has been forwarded to him, it becomes available. Disallowance of a certificate by the Secretary of State is, they were informed, of the very rarest occurrence. In recent years the practice has been to notify certificated persons that the certificate is not to be deemed available until the Secretary of State has intimated that it has not been disallowed. This power had, according to Professor Schäfer, who gave evidence before them as well as before the Commission of 1875, been illegally assumed by successive Home Secretaries. He contended that the authors of the Act intended that the grantors of the certificates and not the Secretary of State should be responsible to the public.

This derogation from the undivided responsibility of the Secretary of State in the matter of certificates was, they say, emphasized by Sir William Byrne, who appeared before the Commission on behalf of the Home Office. He laid stress on "a very important difference" between licences and certificates, the former being *recommended* by the scientific authorities and the latter being *granted* by them. Thus in the case of a certificate dispensing with the use of anaesthetics he said "it is not the Home Office that excludes the use of anaesthetics, it is the learned authority that signs the certificate that excludes them"; and again he said "the Secretary of State has not to decide whether an operation is painful or not, . . . his attitude is that he himself has no power to decide what is pain and what is not"; and again "the learned authorities have exclusive authority to grant the certificates."

They think that difficulty and confusion would have been obviated if the Legislature had followed strictly the recommendation of the Royal Commission of 1875 in this regard. They think the present method of certification not only unnecessarily complicated but an undesirable departure from the principle of undivided responsibility of the Secretary of State, which they concur with the previous Royal Commission in desiring to see established.

In the report attention is drawn to the difference between the recommendations of the Royal Commission of 1875 and the provisions of the Act of 1876 in regard to the undivided responsibility of the Secretary of State in reference to several charges made against the Home Office, and the opinion is expressed that it would have been well if the complete recommendations of the Royal Commission had been carried out. Their colleagues insist that in their view "it is of the highest importance that the responsibility of the Secretary of State should be in all respects maintained."

The question, it is said, is closely related to that of the appointment of competent persons to advise the Secretary of State in regard to the nature of the experiments to be performed by licensees under the Act and as to the relaxation by certificates of the requirements of the Act for the protection of animals from suffering.

They of course agree with the previous Commission in recognizing the need for the Secretary of State to call to his aid professional advisers of competent knowledge and experience. Again they endorse the recommendations of the Commissioners of 1875 that these "advisers should be from time to time selected and nominated by (the Secretary of State) himself," and that "their names should be made known to the profession and to the public." The Commission is unanimous in stating that "in our opinion the recommendations of the Commission of 1875 should be strictly followed." They are at one in desiring to maintain the responsibility of the Secretary of State, but inasmuch as the present Act divides that responsibilty by statutory enactment in regard to certification, they dissent altogether from their colleagues when they state they have "come to the conclusion that . . . no change is necessary or desirable." They are indeed unable to reconcile this finding with the rest of the report.

The undivided responsibility of the Secretary of State then being established by law, they think that the advisers might be selected and nominated by him from a list submitted to him either in the way suggested in the report or from the holders of the offices named in Section 11 of the Act of 1876. In any case, the selection should be personal and not merely *ex officio*, and the names duly published. They agree with their colleagues in deprecating certain suggested relaxations of the law, and concur with the suggestions made with a view to afford further protection to animals experimented upon and to provide more efficient inspection. They nevertheless think that much could be done to simplify the present cumbrous system of certification and at the same time to secure that undivided responsibility of the Secretary of State which the Royal Commission of 1875 recommended, which this Commission endorsed, but which the Act of 1876 failed to establish.

That system of certification of which complaint was made is indeed the result of attempting to divide the responsibility of the Secretary of State with other persons indicated in the statute. Such amendment in the law as they advocate has the twofold advantage of simplifying procedure and at the same time concentrating responsibility.

The Commission was further unanimous in recommending a discontinuance of the present practice of consulting the Association for the Advancement of Medicine by Research; in the opinion of the signatories to the Memorandum that practice instituted needless additional derogation from that undivided responsibility of the Secretary of State which they desired to secure. If the recommendations of the Commission of 1875, as endorsed by them, were strictly followed, the advisers to be appointed would supersede not

only the Association for the Advancement of Medicine by Research (which the Secretary of State has never been under any obligation to consult), but also the scientific authorities named in Section 11 of the Act, so far as their assistance—other than as certificating authorities—would be required under the simpler system of licensing which they advise. All licences and certificates (or such conditions attached to licences as would take their place) would then be granted only by the Secretary of State himself, after the applications had been fully reported upon by the competent advisers whose names would be known to the public.

Painless Destruction of the Animal when Suffering Ensues.

Colonel Lockwood, Sir William Collins, and Dr. Wilson proceed:

The undivided responsibility of the Secretary of State being secured, and due provision made for expert advice on the one hand and adequate inspection on the other, the object of such special legislation as we are led to support should be to require that all experimental investigations on living animals should be either painless or unaccompanied by any real or obvious suffering. We think that if in the course of scientific investigation the pursuit of knowledge leads to the infliction of real or obvious suffering it is right that the pursuit should cease rather than that the infliction of suffering should continue. Within these limitations the evidence shows that a large and legitimate field for research upon living animals is included, and we do not recall any really fruitful results obtained by any experimenter who appeared before us which would have been seriously prejudiced by such limitations. The weight of evidence in this direction is very remarkable.

After quoting portions of the evidence of Dr. Starling, Dr. Cushny, Mr. Stockman, Sir David Bruce, Sir W. H. Power, Sir Lauder Brunton, Sir Henry Morris, Dr. Martin, and Dr. Langley, the signatories of the Memorandum say that the evidence appears to them to be conclusive that such experimental investigation upon living animals as is now generally deemed essential or necessary, can be performed either painlessly under anaesthetics or under an imperative requirement that should obvious suffering result the animal shall be forthwith painlessly killed. The present Act does not require this. In justification of this they quote some evidence given by Dr. Thane, who, in reply to the following question: "If you found an animal on one of your inspections in that state of suffering should you order it to be killed?" replied, "I should certainly require it to be killed." Dr. Thane, they say, here contemplated the exercise of a power which the statute does not give. The signatories of the Memorandum think that the inspectors should be armed with such power by law, and that a similar statutory duty should rest upon every licensee. They add that it is chiefly from the evidence given by the inspectors that they have heard of experiments in which pain and suffering have ensued. They say:

Prior to 1905 the Home Office Returns purported to distinguish between "painful" and "painless" experiments, but this distinction is now abandoned as being unsuccessful or even misleading. The difficulty of making the distinction is especially encountered in the case of inoculation experiments, the number of which has greatly increased in recent years.

A "condition" has, it is true, been attached to certain certificates in the following terms:—

"That if an animal, after, and by reason of, any of the said experiments under the said Certificates....., is found to be in pain which is either considerable in amount or is likely to endure, *and if the main result of the experiment has been attained*, the animal shall be immediately killed under anaesthetics."

As pointed out in our Report, by the insertion of the words which we have italicised "it will be seen that the animal need not be killed though in considerable pain—considerable and likely to endure—*if* the main result has not been attained. Thus official sanction is given in terms to keeping an animal alive for an indefinite time though suffering considerable pain, at the sole discretion of the operator."

The Secretary of State particularly invited the Commission to express an opinion in regard to the "Paid Condition" and especially with reference to the propriety of retaining or eliminating the words "if the main result of the experiment has been attained."

We agree with our colleagues that such a "condition" in such terms is indefensible, and we are clearly of opinion that the proper remedy to apply is to insert in the Act an imperative requirement upon every licensee forthwith painlessly to destroy any animal in which signs of obvious suffering have resulted.

We are unable to appreciate the position taken up by our colleagues on this question. They urge the necessity for "additional safeguards against pain" and they recommended that:—

"An Inspector should have power to order the painless destruction of any animal, which, having been the subject of any experiment, shows signs of obvious suffering or considerable pain, even though the object of the experiment may not have been attained."

They accordingly recognize the principle that in the case of any experiment the requirement of immediate destruction upon the appearance of signs of obvious suffering may be enforced. We recommend that this be a statutory requirement upon the experimenter in every such case.

Our colleagues, however, introduce a different "condition" in such cases for the experimenter to that which they would place upon the inspector, viz.:—

"That in all cases in which in the opinion of the experimenter the animal is suffering severe pain which is likely to endure it shall be his duty to cause its painless death, even though the object of the experiment has not been attained."

Here it will be observed the discretion of the operator and the likelihood or the unlikelihood of the severe pain enduring (for some undefined period of time) are introduced. In our judgement confusion and complexity would arise by thus laying down a different formula applicable to the inspector from that obtaining in the case of the experimenter. Conflict of opinion and jurisdiction would be the not improbable result.

In justification of their recommendation our colleagues go on to say:

"But we do not feel justified in recommending that, when the object of the experiment has not been attained, an experimenter should in all cases be required to destroy the animal immediately it exhibits signs even of severe pain which might in some cases be only momentary."

Here they appear to reintroduce the consideration of whether the object of the experiment has been attained or not, which they previously discarded alike for the inspector and the experimenter. We cannot contemplate the sanction of any such procedure in which either an animal is knowingly and intentionally to be kept for an undefined period in severe suffering if the experimenter thinks (perhaps erroneously) that such endurance will not be prolonged or in which he is authorized to allow the severe pain to continue in the problematical expectation that some result may accrue. We are unaware of any "weighty evidence" which justifies such recommendation.

The signatories of the Memorandum agree with their colleagues in strongly holding:

"that limits should be placed to animal suffering in the search for physiological or pathological knowledge, though some have contended that such consideration should be wholly subordinated to the claims of scientific research, or the pursuits of some material good for man."

They endorse the views of the former Commission that:

"the object of the conditions should be to ensure that suffering should never be inflicted in any case in which it could be avoided, and should be reduced to a minimum where it could not be altogether avoided."

They therefore recoil from the suggestion that an experimenter should be authorized to protract the life of an animal in obvious suffering, or "which exhibits signs even of severe pain." Official sanction to any such procedure is out of harmony with the whole spirit of the report and of the other recommendations which it contains; it would, they believe, create "serious misgiving in the minds of the public," similar to that which the licensing of certain experimenters was "calculated to create." They accordingly recommend the insertion in the Act of a requirement upon all experimenters in every case in which obvious suffering has supervened forthwith painlessly to destroy the animal. It would then be the duty of the enlarged inspectorate, which we agree in recommending, to see that this statutory requirement is duly enforced.

In sum, the fundamental principles upon which any special legislation should be based should, in their opinion, be such as to secure:

(1) That all investigations upon living animals of an experimental nature by way of operation, inoculation, or infection, etc., shall only be conducted under the sanction and undivided responsibility of the Secretary of State, aided by skilled advisers, and exercising control and supervision by an adequate staff of inspectors.

(2) That all such investigations which, in the absence of anaesthesia would be likely to cause pain or suffering, shall be conducted under adequate anaesthetics, skilfully and humanely administered, or if the nature of the investigation render this impracticable, then that on the supervention of real or obvious suffering, the animal shall be forthwith painlessly killed.

Other Questions.

There are one or two minor questions also on which the signatories of the Memorandum are not in concurrence with the findings of the report.

(*a*) *Serums and Vaccines.*—Although the Act of 1876 by its preamble purports to extend the law relating to cruelty to

animals to "the cases of animals which for medical, physiological, or other scientific purposes are subjected when alive to experiments calculated to inflict pain," they were informed by Mr. Thane that the law officers had advised that the processes of obtaining serums and vaccines for commercial use do not come under the Act as not being "experiments." No definition of the term "experiment," however, is given in the Act. Mr. Thane and Dr. Martin favoured the view that the preparation of such products should be brought under the control and responsibility of the Government.

As stated in the Report, private premises have been registered under the Act for the purpose of testing and standardizing drugs manufactured on a large commercial scale. The procedures leading to the experimental preparation of various serums have also been subject to the provisions of the Act. In their opinion, if it be desirable to require registration, inspection, etc., under the Act in the case of the experimental production of serums and vaccines, it is idle to suggest that similar procedures, involving the use of living animals in a similar way should be exempted from such control if the object happen to be commercial rather than scientific. From the point of view of the animal such precautions are not less necessary, and from the point of view of mankind such supervision may be deemed more necessary.

They do not share the doubt of their colleagues that the production of serums and vaccines for commercial purposes involving the use of living animals falls outside the scope of their reference. They accordingly recommend that the law be made applicable to the case of the production of commercial serums and vaccines so far as living animals are utilized for such purposes.

(*b*) *Qualification of Inspectors.*—They think that persons qualified in veterinary medicine and science ought not to be deemed ineligible for any of the inspectorships as would appear to be implied by Paragraph 113 of the Report.

(*c*) *Reports of Results of Experiments.*—They agree that the Secretary of State should use the power he has under Section 9 of the Act of 1876, and that he should direct licensees to report to him the results of their experiments. They think, however, that such reports should be the rule and not the exception, or in particular cases only, as the Report seems to contemplate.

CO-OPERATION BETWEEN DOCTORS AND CLERGYMEN.

WE have received the following communication, dated March, 1912, for publication. We leave the responsibility for the findings set forth in this document to the committee, of which, as stated therein, the Dean of Westminster is chairman.

A conference of prominent members of the clerical and medical professions was held in London in October, 1910, to consider the asserted results and the rapid development of so-called "spiritual" or "faith-healing" movements.

A special committee, representative of both professions, was then appointed to consider and report upon the possibility and the best methods of closer co-operation between the two professions in their respective spheres.

This committee held twenty-two sessions in the course of last year, and had the advantage of personal interviews with, and replies to their inquiries from, many eminent medical practitioners—some of whom had made the relation of mind to body their special study—and from clergy throughout the country. They also had the evidence of many persons associated in one way or another with so-called "spiritual" or "faith healing."

The following preliminary conclusions or findings of the committee were unanimously adopted by the conference again convened in October, 1911. An enlarged permanent committee of clergy and medical practitioners was then appointed to continue investigations; to promote all legitimate co-operation between the two professions; and, so far as may be, to influence opinion and correct false impressions in regard to irregular and unqualified attempts at "healing" in the name of religion.

Of this permanent committee the Right Rev. Herbert E. Ryle, D.D., Dean of Westminster, has consented to act as chairman.

Findings of the Committee.

1. That, after careful and extensive inquiry, there is not sufficient proof of any general or frequent failure (as has been alleged) of cordial relations between the medical practitioner and the minister of religion in their respective ministrations to the same sick person. Such cases are exceptional and rare.

2. But that there is room for more co-operation between the two professions, within clearly defined limits, with a view to the alleviation of physical through the mental or spiritual conditions of the patient.

3. The clergyman may be of great assistance in certain cases by reinforcing through his spiritual ministrations the faith, hope, courage, and strength of the patient.

4. The ministrations of the clergy may be of most direct assistance—

(*a*) In preparing for operation.

(*b*) In such nervous or mental cases as are specially open to benefit from religious influences.

(*c*) In dealing with certain vicious propensities.

5. That any attempt on the part of the clergy to enter into competition with the medical practitioner by any separate and independent treatment of the sick is to be strongly deprecated, not merely on practical, but also on religious grounds. For there is a serious danger lest the association of physical healing with the work of the ministry should divert attention from the primary purpose of that ministry, and prove injurious to individual faith.

6. The medical practitioner should realize that—

(*a*) By encouraging the legitimate ministrations of the Christian Church he will most effectively prevent resort to undesirable forms of suggestions.

(*b*) In certain cases patients can be approached from the spiritual side when ordinary methods of medical suggestion are more difficult to apply.

(*c*) Such cases are more often of the nature of functional disorders, minor obsessions, or vicious habits; although there is evidence that even in organic diseases subjective symptoms (for example, pain) may occasionally be relieved.

(*d*) The calming and strengthening effects of spiritual ministrations may be a valuable auxiliary to ordinary medical methods.

SCIENCE NOTES.

CHAMBERLAIN AND VEDDER have an interesting paper in the *Philippine Journal of Science* for November, 1911, on the effect of ultra-violet rays on amoebae and the use of these radiations for the sterilization of water. The authors believe that their experiments, taken as a whole, undoubtedly demonstrate that in a water supply the amoebae, whether motile or encysted, may be killed by a comparatively short exposure to ultra-violet rays. Balantidia also appear to be destroyed by the same agency. Such facts, the authors therefore think, afford a very potent argument in favour of the use of these radiations in the practical sterilization of water in the tropics. They intend shortly to determine whether the rays are fatal to amoebae and other protozoal parasites under the conditions obtaining with the commercial sterilizer in practical use. In a paper communicated recently to the Royal Society by Professor W. M. Thornton of Newcastle-on-Tyne he reported some observations on the rate of inhibition of bacteria by electric currents. The electrical conductivity of bacteria, he said, was measured by observing their orientation when an alternating electric current was passed through a series of saline solutions of graded conductivity containing them. There was no orientation when the conductivity of the liquid was the same as that of the bacteria. The values found ranged from 35 to 350 ohms per centimetre cube, and depended upon the nature and state of the culture medium. The result of subculturing in broth was found to be that the conductivity of the bacteria increased at each step, reaching a steady value at about the fourth subculture. Tap water containing *B. coli communis* could be completely sterilized by direct currents in several hours at 0.2 ampère sq. cm. Alternating currents sterilize water nearly if not quite as well as direct currents having the same current density. In order to obtain well-marked and consistent results it was necessary to use high-current densities and to have a form of cell with a thin film of liquid which could be readily cooled. Milk was curdled by direct current at the positive pole and thinned at the negative pole. Milk could be sterilized without curdling by passing alternating currents, the effects being largely thermal. The cause of the marked bactericidal action of light was suggested to be syntony between it and the frequency of electronic rotation in the atoms of protoplasm.

LITERARY NOTES.

THE *Edinburgh Medical Journal*, speaking of Lord Lister, says:

No survey of Lister's life would be complete or honest which failed to refer to his attitude towards the great problems of existence, to Life, and Death, and After. His attitude to these questions, like that of Newton and of Pasteur, and of others whose genius has plumbed the abysses of being or "outsoared the shadow of our night," was one of childlike humility and confidence. He still looked to things eternal, and walked humbly with his God. He held the blessed hope of everlasting life, and believed in a happiness beyond the grave. Lister is not dead.

This brings to mind an interview which the writer of these notes had with Lister many years ago, in which the question of the survival of the soul after death was discussed. The tone of deep conviction with which he quoted the words of Tacitus, "*Animae heroum non extinguuntur*," was most impressive.

It is only of comparatively recent years that the public conscience has been fully aroused to a sense of the frightful evils attending the unchecked spread of consumption, but every effort is now being made to make up for lost time. There has even been an attempt to eliminate this terrible disease entirely by the simple process of removing the children of tuberculous parents from their tainted homes and bringing them up in healthy surroundings, but, excellent as are the immediate results of this experiment, there seems reason to believe that we have not yet arrived at the final solution of the problem. Drs. Etienne Burnet and Léon Tarassevitch, whose most interesting account of "Tuberculosis Amongst the Kalmuck Tartars" appeared in the February number of *L'Hygiène*, have been convinced by their observations amongst the nomad tribes of the Russian steppes that the dwelling in constant contact with infection breeds in many cases a certain immunity, and that, on the other hand, persons who have been reared in an absolutely untainted atmosphere are peculiarly susceptible when exposed to infection. The wandering tribes of Kalmuck Tartars are a typical instance of the devastating effects of phthisis introduced into virgin soil. Fifty years ago, when these primitive inhabitants of the steppes were almost completely isolated from the rest of mankind, tuberculosis was practically unknown amongst them; and even now they do not suffer from it save when brought into contact with more civilized races. Consequently there is a far higher average of phthisis amongst the Kalmuck men who mix more frequently with the Russians than amongst Kalmuck women, and this despite the fact that the former live almost entirely in the open air and the latter spend their days in dirty, badly ventilated, and badly lighted huts. Moreover, the ravages of consumption are so deadly amongst Kalmuck children of either sex who have been sent to school in Astrakhan, that the school for Tartar girls formerly existing in that city has actually been closed, and a similar fate threatens to overtake the college for boys, which it is proposed to transfer from its present situation in the city to the steppes. A still more conclusive proof of the origin of consumption amongst the Kalmucks and the terrible results of its introduction amongst them is the fact that nowhere is it so rife as at Tchilguire, where the contact between the two races is very close, and the Kalmucks are allowed to intermarry with the Russians, a doubtful blessing for which they pay a very heavy toll. It is obvious, therefore, that the proposal to safeguard the rising generation from consumption by isolating it from every breath of infection leaves much to be desired, since the natural and logical result can only be to deprive it of the partial immunity which in reality constitutes its chief means of self-defence. Other articles contained in the February number of *L'Hygiène* have been contributed by Dr. Maurice de Fleury, who writes on the cause and effect of anaemia in young girls; by M. Emile Gautier, who has given a short account of the latest disinfectant, hypochlorine; and by M. Henri Meurisse, who gives some valuable advice concerning that dangerous delicacy, the mushroom.

Writing in the *Aberdeen Daily Journal* about the second volume of a *Miscellany* issued by the New Spalding Club, which contains a continuation from 1631 to 1700 of the list of Aberdeen burgesses compiled from the Minutes of Council by the late Mr. Alex. M. Munro, "K. J." says he was surprised to find the following entry:

1641.—August 30. Dr. William Hervye, physician to the King; Hadrian Mitcalff, apothecary to the King; and Mr. Alexander Midletoun, sub-principal of King's College. G. [Honorary burgesses.]

William Harvey was admitted an honorary burgess of Aberdeen on August 30th, 1641. What business, K. J. asks, brought William Harvey to Aberdeen? He was then 63 years of age. It is impossible to conclude that he undertook the long and tedious journey from London to Aberdeen simply to quaff the ever-hospitable cup of Bon-Accord with Provost Alexander Jaffray, the Baillies, and Council of the braif toun. Charles I was in Edinburgh presiding over the Parliament. Harvey, although taking no part in the dangerous politics of his time, was deeply in the secret confidence of the King, and, K. J. thinks, went to Aberdeen seeking advice on His Majesty's behalf from Dr. John Forbes of Corse, the ablest man on the side of Scottish Episcopacy, and other friends in the north. He goes on to say:

Fifteen years ago one of our budding historians, a man who has since done some excellent and careful work, wrote and issued a privately printed booklet entitled *Aberdeen Royal Physicians*. Fortunately, the edition was very small, for it contained several errors, the greatest of which was the assignment as Physician-in-Ordinary to the Court of James I and James VI of a man who was not of Aberdeen, possessed no degree in medicine, never held a Court appointment, and died very young in the East Indies, where he served as surgeon of an Indiaman. When the name of David Chamberlayne is eliminated from the place in the booklet which it should never have occupied, the British Solomon is left in the sad plight of having no Aberdeen doctor attached to his Royal Household at any period of his long reign. Yet he had at least three. Maister Gilbert Skeyne, doctor in medicine (fourth son of James Skeyne of Westercorse, notary in Aberdeen), who had been Professor of Medicine in King's College, was, on June 16th, 1581, appointed medicinar to his Majestie. Skeyne's tracts, *Ane breve descriptioun of the Pest*, Edin. 1568, and *Ane brief descriptioun of the qualitеis and effectis of the well of the woman hill besyde Abirdene*, 1580, are well known by the reprints presented to the members of the Bannatyne Club by James Skene of Rubislaw in 1860. He retired from practice in 1593, and died in 1599.

Then K. J. adds that Dr. John Craig,

an Aberdonian, who taught logic and mathematics at Frankfort-on-the-Oder (1579–82), where Dr. Duncan Liddel met him, was appointed Physician-in-Ordinary to King James, but did not live to accompany His Majesty to England.

His successor was unknown to K. J. until, happening to search the Treasury Rolls of England of the period for something else, he came upon the name, "James Chalmers, Physician to the King."

From these records it appeared that about 1619 the physician and Adrian Metcalfe, the King's apothecary (the burgess of 1641), travelling with several attendants in rural Oxfordshire, came to a village inn, where they demanded refreshment. The innkeeper had not expected visitors of distinction, and Chalmers, dissatisfied with what was set before him, became enraged, and ordered his attendants to take down the sign-board of the inn and burn it. While the consequent disturbance was going on a county squire rode up, and, learning the cause of it, turned to Chalmers and said: "Sir, I have travelled in your country for three days and three nights without being able to obtain food or shelter, or even a fit stable for my horse."

Immediately on the physician's return to London he haled the Oxfordshire gentleman before the Star Chamber, accused of insulting his most sacred Majesty King James by casting false reflections on his native country. Several stages of the process are noted in the records, but the decision is wanting. Notwithstanding this not very creditable incident, K. J. continues, the King's Physician must

have been a good doctor, otherwise he could not have gained the appointment. He located him in Munro's first list of burgesses (1399–1631), *New Spalding Club Miscellany*, vol. i, admitted honorary burgess, 1617; again in the second list in 1634, when Robert Brabner is made a burgess of guild at his request, but in neither instance are any local antecedents mentioned.

In Dr. Littlejohn's Sheriff Court Records he found Chalmers mentioned repeatedly in relation to business of a kind that made his local origin reasonably certain. K. J. goes on to say:

From the times of the first Stuart King of England to the present days of King George V. there has always, with but few intervals, been an Aberdeen doctor upon the staff of Court physicians. With the single exception of the metropolis itself, no city in the kingdom has been equally honoured.

British Medical Journal.

SATURDAY, MARCH 23RD, 1912.

NASCENT IODINE IN LUPUS AND LARYNGEAL TUBERCULOSIS.

IN the course of the last two years several reports have been published in the Scandinavian and German medical press dealing with the treatment of lupus and laryngeal tuberculosis by nascent iodine. The fact that iodine is most powerful as an antiseptic when in the nascent state led the Swede, Dr. Pfannenstill, to give an iodide by the mouth and ozone by the inspired air, on the assumption that iodine would be set free and would act as an antiseptic on the tissues of the respiratory tract. Clinical tests of the method began at a hospital in Malmö in November, 1908, when Dr. Pfannenstill gave 0.5 to 4 grams of sodium iodide daily by the mouth in doses not exceeding 2 grams at one time. Ozone obtained by electrical means was allowed to escape freely into the room, or to pass through a tube opening a short distance from the mouth of the patient, who was thus kept in an atmosphere charged with ozone for several hours a day. In spite of several difficulties and interruptions in the treatment owing to imperfections of the ozone plant, recovery occurred in the two cases of laryngeal tuberculosis and the two cases of lupus of the nose in which this treatment was first adopted. In the Scandinavian press Dr. Pfannenstill's publication[1] roused much interest as well as criticism which raised the questions: (1) Is free iodine really set free in the tissues? and (2) Is every case of ulceration reported as cured by this treatment tuberculous and not syphilitic? No direct answer to the first question is as yet forthcoming, but the fact that iodides and ozone given separately have no therapeutic value certainly suggests an affirmative answer. The failure of iodides alone to affect ulcers of the larynx also points to their not being syphilitic, and in a number of successful cases more recently reported Wassermann's reaction was negative. Pfannenstill's method was soon tested at the Swedish sanatorium, Säfsjö, by Dr. Tideström, and in Stockholm by Dr. E. Stangenberg, and their observations were reported at a meeting of the Swedish Medical Society in January, 1911.[2] Tideström reported 12 cases of laryngeal tuberculosis and 1 case of pharyngeal tuberculosis thus treated. In 9 cases, including the case of pharyngeal tuberculosis, the disease was cured; in 2 it was much improved, in 1 it was slightly improved, and in 1 it was unaffected. In the two latter cases the patients were in the last stage of phthisis. Stangenberg's report was less favourable; of 4 selected cases of laryngeal tuberculosis, only 1 showed marked improvement after the treatment, which was supplemented by excision. In the discussion which followed, it was pointed out that the conflicting results which these two series of observations presented might be accounted for by differences in the technique employed, and by the fact that the treatment was ambulatory in many of Stangenberg's cases.

While this treatment, therefore, in laryngeal tuberculosis is still *sub judice*, much more satisfactory and unequivocal results have been obtained in the treatment of lupus cavi nasi. Adopting Pfannenstill's suggestion that a solution of hydrogen peroxide should be substituted for ozone, Dr. Strandberg, of the Finsen Institute in Copenhagen, gave 3 grams of sodium iodide by the mouth daily, distributed in six doses, and inserted fine gauze tampons into the nose, care being taken that the gauze should be in as close contact as possible with the diseased tissues. The gauze was kept soaked with the solution of hydrogen peroxide, which the patient was taught to instil with a pipette several times a day till it could be felt trickling down the pharynx. As the production of nascent iodine is favoured by the presence of an acid medium the following solutions were used: (1) 100 grams of a 3 per cent. solution of hydrogen peroxide *plus* 5 grams of acetic acid; (2) 100 grams of a 1.5 per cent. solution of hydrogen peroxide *plus* 50 cg. of acetic acid. During the first few days of the treatment the stronger solution was applied until a marked reaction with swelling of the mucous membrane appeared. Then the weaker solution was used until the ulcers were healed, and the swelling and infiltration had disappeared. Dr. Strandberg's report[3] dealt with the first 13 patients treated in this way till the end of October, 1910. In the 10 cases in which Wassermann's and von Pirquet's tests were applied, the former was negative and the latter positive. In the remaining 5 cases the disease was also undoubtedly lupus, not syphilis. The disease was completely cured in 9 cases, and in only one case in which the disease was confined to the vestibulum, and had not spread to the nasal mucous membrane, was the treatment ineffective. It was thought that this failure might be due to the fact that the patient was very lax in carrying out her instructions. The rate of recovery bore no relation to the extent of the disease, for it was cured in sixteen days in a case presenting much infiltration, ulceration, and granulation of the mucous membrane, whereas in another with far less extensive and active disease, eighteen days were required to cure the right, and three months the left side of the nasal cavity. In 2 cases hydrogen peroxide was applied without the administration of sodium iodide, but this seemed to aggravate the disease. The administration of sodium iodide alone was also found to be futile. Hitherto the treatment of lupus cavi nasi which has given the best results at the Finsen Institute in Copenhagen has been a combination of galvano-puncture, painting with iodine, and the application of mercury perchloride on tampons. This procedure is difficult and tedious, and relapses are frequent. The advantages of Pfannenstill's method are numerous, for it is more sure and rapid, and it involves less destruction of the tissues. It also brings within reach of treatment minute and remote foci of disease which must often be overlooked in treatment by galvano-puncture. More recently Dr. Strandberg has published[4] 104 cases treated by Pfannenstill's method; 12 out of the first 15 patients were discharged cured, and the disease had not relapsed in 8 patients seven to twelve months afterwards; in the 4 cases in which a relapse occurred it appears that the patients were discharged too early, the disease probably being then still active. Between October 25th, 1910, and July 1st, 1911, 78 patients were

[1] *Hygiea*, Nos. 5 and 6, 1910. Also *Transactions* of the Malmö Medical Society, February 10th and April 14th, 1910.
[2] *Transactions* of Svenska Läkaresällskapets Förhandlingar, January 1st, 1911.
[3] *Berl. klin. Woch.*, No. 4, 1911.
[4] *Berl. klin. Woch.*, No. 39, 1911.

treated; of these, 70 were women and 8 were men' the ages of the patients ranging from 8 to 60 years. In 64 cases the disease was bilateral; in 73 cases lupus of the skin was also present. Wassermann's reaction, taken in 74 cases, was invariably negative. Von Pirquet's reaction, taken in 68 cases, was invariably positive. The analysis of the results shows that 13 patients were still undergoing the treatment which had effected considerable improvement in every case, that 19 had returned home before the completion of the treatment, that 38 had been discharged cured.

The duration of the treatment is two to three months, and it is therefore contraindicated for those patinets who cannot devote this period to the treatment. Patients can, however, shorten the period of treatment by two to three weeks by conscientious co-operation with the physician. Cases of old standing react as well to the treatment as early cases, and a case is recorded in which complete recovery took place in three months after various other methods had been employed over a period of twenty years. In no case was iodism observed, and latent phthisis never became active; but phthisis which was already active became aggravated, and the treatment was therefore not prescribed in such cases. The technique of the treatment has undergone several modifications, and is probably not yet perfect. Dr. Strandberg finds that hydrogen peroxide is more effective in the presence of a small quantity of iron perchloride and hydrochloric acid than in the presence of acetic acid. The nasal cavity is cleared of crusts and débris by the preliminary application overnight of a 1 to 2 per cent. solution of alsoldermorphil on a tampon. The gauze used should consist of small strips free from all starch, and should be renewed twice a day by the physician; the patient should drip the solution of hydrogen peroxide on to it every ten minutes. Lupus of the hard palate[5] has also been successfully treated by this method, a false palate being made, between which and the true palate a layer of gauze soaked in a solution of hydrogen peroxide was inserted.

The success attained at the Finsen Institute in Denmark in lupus cavi nasi by this method led to its application to cutaneous lupus.[6] As it was found that much of the diseased tissue lay too deep to be affected, the production of nascent iodine in the tissues by electrolysis was attempted; for iodine is set free at the positive pole when an electrical current is passed through even as dilute a solution of sodium iodide as 1 in 270,000. Experiments with calf serum showed that the reaction in this medium was somewhat inhibited, but that it still took place if the solution of sodium iodide was as strong as 1 in 30,000. The efficacy of the starch test for free iodine in the tissues was tested on a rabbit, into the ear of which a solution containing starch and sodium iodide was injected. After the ear had been well massaged the positive pole, consisting of a platinum iridium needle, was inserted into the ear, while the negative pole of the battery was placed on the rabbit's hind leg. Almost as soon as the current was started a marked blue coloration appeared at the positive pole and nowhere else. This experiment was controlled by its repetition with starch but no sodium iodide in the ear, when no blue coloration appeared. The rabbit was now given 50 cg. of sodium iodide through a stomach tube, and ten minutes later the starch reaction appeared in the ear. The feasibility of producing nascent iodine in the tissues was thus proved; but as 50 cg. of sodium iodide in the rabbit corresponds to 20 grams in man, the dosage is far too high for practical purposes. Further experiments on the rabbit showed that a dose as small as 7 cg. gave a marked positive reaction on electrolysis one to two hours after its administration by the mouth, this dose corresponding in man to 3 grams, which are usually well tolerated. By passing an electrical current through solutions of sodium iodide in human and rabbit serums, it was found that rabbit's serum had greater powers of inhibition on electrolysis than human serum, the most dilute solutions of sodium iodide which gave a positive starch reaction being 1 in 7,000 and 1 in 13,000 respectively. Further observations were made on man by giving 2 grams of sodium iodide by the mouth over a period of one hour, and withdrawing 50 c.cm. of blood an hour later. The serum was found to give a positive starch reaction after a current of 20 milliampères and 65 volts had been passed. But *in vivo* such a strong current would cause great pain and tissue necrosis. A smaller current was therefore indicated, and by increasing the dose of sodium iodide to 3 grams, a positive starch reaction in the serum was obtained by as small a current as 2 milliampères. This current is quite painless and causes no appreciable necrosis. The following procedure is adopted in cases of lupus of the skin. The patient is given at least 3 grams of sodium iodide by the mouth in one or two successive doses about two hours after a light breakfast which has consisted of bread and tea or coffee. In one hand he holds the negative pole, which consists of a metal plate covered by wet cloth. The positive pole, which consists of a fine platinum iridium needle, is inserted into the skin, and a current of 3 to 4 milliampères and 65 volts is passed. The current should be slowly broken before the withdrawal of the needle to avoid painful stimulation. The needle is kept in the tissues for about three minutes at a time without inconveniencing the patient much. By this procedure lupus can be attacked at a considerable depth, for iodine is set free along the whole course of the needle, whereas a very limited surface is treated at one time. This difficulty is met by the construction of a positive pole consisting of a plate, on to which fine needles are soldered at a distance of half a millimetre from each other. This treatment is somewhat painful, but the operator can make twenty to thirty punctures at one sitting.

Detailed reports of 5 cases of lupus of the skin treated by the above method are given. In 2 cases the patients made a complete recovery; in the remaining 3 cases great improvement had been effected, and the patients were continuing the treatment. No necrosis of the tissues occurred, and the puncture wounds healed rapidly, being covered by smooth, soft scar tissue. Local anaesthesia was not employed, as it was considered advisable to simplify the procedure to the uttermost in its experimental stage; but, as the treatment is painful, local anaesthesia will be employed in future. No toxic symptoms followed the administration of sodium iodide, although the dose of this drug had to be raised in 2 cases from 1 and 2 grams respectively to 3 grams before the beneficial action of the electrolysis became evident. Although this treatment has not yet emerged from the experimental stage, the results already obtained point to its being a valuable remedy, especially in cases of lupus unsuited for excision, and where Finsen light is unable to penetrate deeply enough.

[5] Schaumann, *Berl. klin. Woch.*, No. 40, 1911.
[6] Axel Reyn, *Hospitalstidende*, No. 40, 1911; and *Berl. klin. Woch.*, No. 42, 1911.

THE MAN WITH THE MUCK-RAKE.

IT may be taken as a striking testimony to the sterling value of the work by hospitals that there is nothing which newspapers of the baser sort seem to find a more attractive lure than the headline "Hospital Scandal." It is true the "scandal," even when set forth with all the arts of cheap sensationalism, may usually be described as much ado about nothing. That mistakes sometimes happen, that isolated examples of carelessness or neglect do occur, is only to say that the men and women who devote themselves to the care of the sick poor are human. Taking into account the conditions under which the work of a hospital has to be done—the pressure of numbers who have to be attended to, the variety and difficulty of the problems and the speed with which they have to be dealt with, the exacting nature of the demands thus made on the mental and bodily energies—the wonder is that "scandals" are so few. The wonder is all the greater since hospitals carry on their work in a fierce light of publicity, and literary scavengers are always prowling about to pick up some bit of garbage. These men are, like Falstaff, labouring in their vocation, and, unsavoury as it is, we need not say anything about them as long as they do not make up for the lack of matter by inventions. They usually confine themselves to occurrences which, though deplorable in themselves, are either inevitable accidents, errors of judgement on the part of hospital officials, or necessary consequences of the shortcomings of the Poor Law. Then we have the "Red Catechism," which says that doctors make "experiments" on patients in hospitals. This may be excused on the score of ignorance, but stories have been written by people who ought to know better in which charges amounting to human vivisection are freely made against surgeons. These things are so obviously the outcome of prejudice that they defeat their object by exaggeration.

It has been reserved for Mr. George Trelawney, an author whose name is new to us, to make a peculiarly cowardly attack on a class of hospital which has proved itself of the greatest use in places where the advantages of large institutions for the care of the sick poor are not available. The cottage hospital is essentially a modern development of medical charity, and it is one which, in view of the conditions in which it carries on its beneficent work, might have been thought safe from the assaults of the scandal-monger. Yet it is the cottage hospital which is chosen for the objective of an attack all along the line by the writer to whom we refer.[1] Of course he professes to be inspired by the highest motives and, like Brutus, to speak only of that which he knows. We do not hint a doubt as to the honesty of his intentions, but we do say that the whole tendency of his book is misleading. Either his simplicity has been imposed upon, or, like so many who call themselves philanthropists, he is too ready to believe evil of persons and institutions that are doing good work in the eyes of the world.

Out of the questionable materials supplied to him from what he calls "reliable sources," supplemented by "personal investigation," he has made a story obviously designed to tickle the ears of the groundlings. The book has no literary merit; its sole appeal is to those who delight in morbid sensationalism. The merest outline of the story will suffice to show its character. The scene is laid in Rebley, which is described as "an old isolated and well-watched little town where visitors are as scarce as great auks, and where a new arrival is duly registered at the local Government offices to give proof that he or she has just claim to be considered worthy of the honour of being inscribed upon the list of inhabitants." To the cottage hospital of this remarkable town there comes a new house-surgeon consumed with reforming zeal, which at once brings him into conflict with the medical staff, the secretary, and the matron. The doctors are careless and incompetent; the nurses neglect their patients, even when dying, and spend their time in what a patient calls "canoodlin'," which is defined as "a loving up an' kissen fellers as they gets in ter supper with 'em." The food is badly cooked and served; the drug supply is of the poorest kind; the surgical instruments are worn out and unfit for use. There is no order or discipline. The hospital is used by the doctors as a place of assignation with the nurses. The stimulants intended for the patients are used for drunken orgies, in which the nurses as well as the doctors take part. The out-patients are treated with revolting brutality, and it is plainly implied that an indecent assault is committed by one of the doctors on a girl. An operation of the utmost gravity is performed by a surgeon when drunk, naturally with a fatal result. But what does it matter? The doctor says they do not need to be too particular in these matters as the coroner is a friend of his. Besides, has he not "gained the respectful attention of the local political magnates, who kept a watchful eye upon him with a view to future parliamentary candidature"? And so things go on till the catastrophe comes in the form of the death of a nurse as the result of an abortion procured by the same surgeon, who had been her lover. This man, who, it turns out, has long made a lucrative trade of abortion, avoids the gallows by taking poison.

Of the corruption of the hospital board, whose chairman is the butcher who supplies the meat, and which comprises among its members the hospital baker, grocer, wine merchant, provision dealer, greengrocer, coal merchant, linen draper, and laundryman, nothing need be said. Practically every one connected with the institution is dishonest—excepting the virtuous house-surgeon. And that Galahad receives the visits of the "heroine"—the chaste victim, it should be said, of the abortion monger who is the chief villain of the book—in his room at night, and the natural result follows. The incident as told may serve as an example of the style of that austere *censor morum*, Mr. George Trelawney:

"Kargill was no longer master of himself. He no longer cared what happened. The passion of his love seemed to be bursting his heart. 'My darling,' he whispered, his blood on fire, his voice choked with the violence of his emotion. She fell on her knees in front of him in an attitude of utter abandon. He bent forward, and once again her arms were around his neck, her burning kisses on his lips, her voluptuous form half-supported between his knees. Long deep sighs escaped each of the lovers in turn. Neither of them spoke. It seemed as if they understood each other's feelings with that perfect comprehension which is only possible at moments of great joy or deep sorrow. As children of exultant Nature they entered into the fullness of life and love." Notwithstanding this lapse, the house-surgeon confounds his enemies and shakes the dust of the hospital off his feet.

This is not the only passage of the book which reeks of the lowest kind of so-called "realism." One

[1] *In a Cottage Hospital: A Novel.* By George Trelawney. (London: T. Werner Laurie.)

description of a girl admiring her charms in a large mirror is strongly reminiscent of a passage in *Nana*, and some of the scenes of hospital life at Rebley recall the touch of the crudest of Zola's imitators. These are merely tricks to attract notice to a worthless book, but they serve to show the class of reader for whose delectation it is intended.

To treat such a production seriously would be an insult to the intelligence of the public. It is unthinkable that such things should occur in a hospital in a small town of which the author himself says: "In such a self-contained little place half the town would have got out of bed if a stray pig had run down the main street." Yet in this place we are asked to believe that there is a hospital which, with the exception of one just man—who falls easily when temptation comes—is simply an "abode of love," with drunkenness, corruption, and every form of cruelty superadded! That there may be occasional abuses even in cottage hospitals need not be denied, but an institution in which such a state of things prevailed as is here portrayed simply could not exist. And we are asked to believe that the Rebley Hospital is not a solitary case. The book ends with the calumnious assertion, conveyed with the solemnity of italics: "Reader, there is many a Rebley Hospital in England to-day!" The author seems to have gathered together all the "scandals" that have ever occurred and discharged the putrid mass into one little hospital in a small town. He has acted in the spirit of the cynical maxim, "Throw mud enough and some of it will stick." The book is disgraceful to the man with the muck-rake who wrote it. Nor does it reflect any credit on the publisher, to whom, we presume, is due the idea of the suggestive picture on the cover of a simpering nurse represented arm in arm with a man whom we suppose to be meant for a doctor.

SOOTHING SYRUPS.

THE report, published this week, on the analysis of certain proprietary syrups sold for administration to infants when cutting teeth, and at other times, shows that three out of the four examined depend in large measure for their properties on anethol or carvone. Now anethol and carvone are principal constituents of our old friends the essential oils of anise, dill, and caraway. Two of the three syrups are alkaline, sodium bicarbonate being used in one case, and a mixture of potassium bicarbonate and magnesium carbonate in the other. The third contains potassium bromide. The other syrup examined is directed to be rubbed on the gums, after which it is of course swallowed gradually by the child; this is a preparation of hydrochloric acid, common salt, saffron, and honey. Perhaps the most noteworthy point in connexion with these preparations is that one of them, claiming to have had a large sale for sixty years, is not now of the same composition as formerly. At one time this preparation contained morphine, as was proved in courts of law on several occasions when proceedings under the Pharmacy Acts were taken against unqualified persons for selling it, and in fact the presence of morphine was admitted by a statement on the package. Now, however, as our analysis shows, it contains no morphine, but potassium bromide. Which of these two is the more unsuitable for giving to infants of a few weeks old is, for the moment, not the question; the alteration of the composition of a medicine which continues to be sold under the old name and with statements as to its having been made for sixty years, shows how utterly the public is at the mercy of the proprietors of such preparations, who are at liberty to omit or add ingredients, or to alter the composition as they please. In previous reports on other classes of preparations several cases have been mentioned in which different bottles of the same nostrum have shown wide differences in composition, in some cases due apparently to gross carelessness in the compounding. Compulsory declaration of the chief constituents on the label, with consequent penalties whenever misstatement could be proved by analysis, would put such nostrums more nearly on the same footing as other drugs. It is evident that nothing less than this can protect the purchaser against arbitrary or careless alterations in composition.

PETROLEUM AND THE PUBLIC HEALTH.

AN illustrated pamphlet entitled *The Coming of Petroleum*[1] has reached us at a moment which lends it additional interest. It gives a full account of petroleum, the fashion in which it is obtained, the work it is capable of performing, and the part which it is destined to play. Summed up, the view of the writer would seem to be that the subterranean collections of petroleum are relatively quite as great as those of coal, though possibly more difficult to discover, and that just as muscle force gave way to steam power in the early nineteenth century, so will coal within a few years give place to petroleum as the immediate source of power and heat, and as the primary and perhaps direct source of artificial light. The grounds for this opinion are, of course, largely speculative, and on the subject of what would be the effect on the public health of the substitution of petroleum for coal the author is entirely silent. There would seem, however, no reason, on the whole, to anticipate that such effect would be of an undesirable kind. Petroleum, indeed, as used in motor-driven vehicles may already fairly claim to have been a factor in the improvement during the last few years of the health statistics of large towns, since by lessening the number of horse-driven vehicles it has helped to diminish the amount of dirt and dust in the streets and the number of fly-generating centres represented by collections of manure. It is true that deleterious properties have been ascribed to the fumes given out by automobile engines when controlled by careless chauffeurs, but the imperfect combustion of petroleum and consequent causation of fumes is not a necessary feature of its use. It can hardly be doubted, too, that disuse of coal as a source of domestic heat would prove advantageous, rendering as it would the air of towns much purer and lessening the number of dense fogs. Whether abandonment of the use of open grates would be of advantage is another question. Despite the waste of fuel which they spell and the circumstance that on a really cold day it is impossible to sit in the centre of a room of any considerable size and yet be comfortably warm, and despite the still more important fact that rooms warmed by coal fires usually connote extremely cold passages, the case for the open grate in this climate rests on good grounds. Still it is by no means unassailable. The cheeriness supposed to be furnished by an open fire is largely a matter of sentiment, and the use of open fires, though an easy, is by no means the only way of securing effective ventilation. Indeed the open grate would probably have been already largely displaced in this country had it not been for the unfortunate disposition of architects to follow the easiest path by using hot water coils, thus heating the air already present in the room, instead of arranging for the introduction to rooms of air already warmed. Central heating on the latter system is perfectly possible, and the comfort and healthiness of houses thus furnished is undeniable.

SCOTTISH MINING VILLAGES.

IT has hitherto been regarded as incumbent upon all large industrial and commercial concerns carried out in parts of the country away from towns and villages to provide housing accommodation for the workpeople. This circum-

[1] *The Coming of Petroleum.* Issued by Curtis, Gardner and Co., Limited, South Place, Finsbury, London. (Demy quarto, p. 64. 2s. 6d.)

stance makes the report of Dr. J. C. McVail,[1] undertaken at the request of the Local Government Board of Scotland, interesting, since he is able to contrast the mining villages of Stirlingshire and Dumbartonshire, and to show the improvements which have taken place during the last few decades. The report deals with 12,276 persons employed in coal mines in 1908; when the wives and children are included, the numbers rise to 42,000. For these people 7,468 houses are required—on an average about five persons for each house. "A typical colliery village consists of one or more rows of one-story brick or stone and slated houses opening on a private roadway for cart traffic, with a surface channel for drainage beyond the roadway, pillar wells at intervals beside the channel, a series of blocks of outhouses beyond it, and small gardens or clothes-drying greens on the further side of the outhouses." The houses may be built in squares along the side of a highway, or isolated in small groups on a moorland, the surface channels being only a few feet from the front doors of the dwellings, or they may be non-existent. A collier's house in some instances consists of only two compartments—a room and kitchen, with connecting door between. Although all plans for new buildings have to be submitted to the district committees of the county councils, yet, invaluable as their by-laws are, they have hitherto not compelled owners to erect coal-houses, washhouses, or sculleries, nor to supply water within the houses, nor have they sought to regulate the dimensions of the living and sleeping rooms. Of 873 houses built under these by-laws, 22, or 2.5 per cent., are houses of one apartment; 735, or 84.2 per cent., are houses of two apartments; 100, or 11.5 per cent., have three apartments, and 16, or 1.8 per cent., four apartments. It is only right to add that since 1904 no one-roomed habitations have been built. In 7.9 per cent. of the 873 houses, baths have been provided; these are nearly all three-roomed houses; the baths are only supplied with cold water, but hot water can be obtained from an adjoining clothes boiler. The set-in beds, which have been a common feature in the houses of the working classes in Scotland, are gradually disappearing, their place being taken by the healthier open iron bedstead. In some of the mining villages reported upon the houses date back to 1770. Many of the old houses are damp. One of the greatest nuisances in mining villages is the privy ashpit, or midden. There is no reason why in mining villages ashpits should not be as regularly cleaned out as they are in most towns. It is simply a question of expense. Since those who receive the benefits consequent upon frequent and regular removal of the filth ought to help to defray the cost, the expenses might be divided between the colliery employers, who are the proprietors, and the occupiers. It is cheaper to prevent than cure disease. An epidemic of enteric fever in a mining village is a costly matter. In some of the colliery districts there is now a daily removal of the refuse by the proprietors. Many colliery owners feel that if they wish to attract a good class of workmen they must provide them with adequate house accommodation. Self-respecting miners will no longer live under the conditions of former times. Bad tenants by their destructiveness not only make bad houses worse, but they set up a vicious circle which, once started, it is difficult to control. The water supply to mining centres is frequently a difficulty. In many instances the drinking water is pumped up from the mines. One of the drawbacks to this as a source of supply is that during a strike there may be great difficulty in getting water for the houses. The average rent for one-roomed houses is £2 14s. 9d. a year; for a house with two apartments, £6 1s. 4d.; a three-roomed house is rented at or about £10 9s. 5d., a four-roomed house £16 3s., and a house with more than four apartments £17 2s. 6d. The colliery owners deduct the rents from the men's wages. It cannot be said that the rents are high. Dr. McVail pleads for the erection of two-storied buildings which would give a kitchen and sitting-room on the ground floor with two bedrooms above, such as are found in many of the mining villages in England. It costs about £120 to build a miner's house if built of brick, £20 more if built of stone, and for this a weekly rent of 3s. 3d. would be required, or £8 9s. per year. One danger to be guarded against in all mining villages is overcrowding. This applies to men who have large families, and also to persons who take in lodgers. Every inducement in the way of good housing accommodation should be given to miners, so as to make their homes not only attractive but healthy; and since in the Coal Mines Bill (1911) a prominent place was assigned to the necessity of baths for miners at the pithead on leaving work, baths should find a place in all miners' houses erected in the future.

[1] *The Housing of Miners in Stirlingshire and Dumbartonshire.* By John C. McVail, M.D., LL.D. Glasgow: Robert Maclehose and Co. 1911. (Post 8vo, pp. 71; figs. 22.)

"ONOMATOMANIA."

THERE is in the case of all men some natural attitude into which they fall when they are not, so to speak, on parade; each has some habitual gesture or some trick of the physiognomy, the hands, or other part which is a characteristic of the individual, and, in fact, a part of his personality. There are even unconscious actions which may be regarded as more or less distinctive of classes. There is the rustic who scratches his head, the horseman who whips his riding-boot, the thinker who finds inspiration in fingering his beard, stroking his nose, or tearing paper to pieces. the heavy dragoon who tugs at his moustache, the bored listener to a dull lecture who draws sketches on blotting paper, the swaggerer who, in Castlereagh's immortal phrase, "comes down to the House like a crocodile, with his hand in his breeches pocket." These mannerisms are so habitual that, by a sort of Leibnitzian *harmonia praestabilita*, they often become necessary accompaniments of the operation of the intelligence. Every one knows the story of Scott's school-fellow, who kept the head of his class as long as he could finger a particular button of his waistcoat, and lost his pride of place when the future Sir Walter, putting his keen observation thus early to practical use, cut off the button. Science has given the name of "manias" to these unconscious tricks, and does not disdain to classify the most trivial of them under that imposing head. It is stated, but with what truth we cannot say, that at a recent congress of neurology a paper was read in which the movement by which the growing lad caresses the first shoots of "valour's excrement" on his upper lip was labelled *moustachiostrepsomania*; the habit of twirling the cane seen in old drum-majors, *strepsorhabdomania*; that of putting the little finger into the ear, *otodactylomania*. Then we have "stomatodactylomaniacs," who put the finger in the mouth; "onychophagomaniacs," who bite their nails; "harmoniomaniacs," who drum with their fingers on window-panes or tables; and "trepodomaniacs," who nervously move their legs. Of this last "mania," a marked example was seen in the late Lord Salisbury, whose intention of taking part in debate was manifested by a peculiar jerking of one foot as he sat with one knee over the other listening to the speech to which he was to reply. Innumerable "manias" which remain unclassified may be seen in Parliament. Mr. Balfour in speaking seems to be striving to pull himself up by the lapels of his coat; the only sign of emotion shown by Disraeli was a rapid look at the clock when the attack of his opponent was hottest; others make much play with an eyeglass, with a bundle of papers, with their hands, and with various parts of their attire. These things are as much meat and drink to the caricaturist as it was to Touchstone to meet a fool. In fact they are sometimes invented to give character to the portraiture. We believe the straw which *Punch* always represented Palmerston as chewing was an artistic

fiction. But are such things worth cataloguing and naming as "manias"? To any who may think it important that this should be done we venture to suggest that "onomatomania"—the mania of naming things—should be added to the list.

POST-ANAESTHETIC HALLUCINATIONS.

It is only necessary to have been under the influence of a general anaesthetic to realize the strange jumble of sensations which crowd upon one during the return to consciousness. Bevan Lewis says that to one who is being anaesthetized it is "obvious how the environment crowds in upon one more and more, and how the ego, or personality, enslaved by its power, finally feels that thought itself is succumbing to its resistless advance." But the enslaving of the ego by the anaesthetic is a mild process compared with the letting loose, as from a Pandora's box, of the instincts, emotions, and passions of which that ego is composed, when, still intoxicated with the drug, the unconscious subject first wakes with all his higher inhibitory centres crippled, if not dormant. The administration of an anaesthetic is such an everyday, routine affair that doctors give little attention to the patient after the signs of returning consciousness have assured them of his recovery. But the sisters and nurses could tell many realistic stories of the hallucinations of their recovering charges. Some are violent, some sing, some talk and shout incoherently, some try to get out of bed and are more or less unmanageable, whilst delusions of various kinds flit like spectres across the path to conscious sanity. Recently Mr. Moser, a dental surgeon, was accused by a woman of misconduct after she had been anaesthetized with nitrous oxide. Mr. Moser sued the patient and her husband for slander and libel, and was awarded £600 damages. The jury characterized the charges as gross fabrications from beginning to end, and Mr. Justice Horridge, who tried the case, in agreeing with the jury, made some strong comments on the necessity of putting a stop to such accusations, and granted an injunction to prevent a repetition of the slander and libel. The judge advised the jury that if they thought that the plaintiff was entitled to damages to make them moderate, having regard to the position in life of the defendants; but that the sum awarded should be such as would entitle him to say that there was not a scrap of evidence against his character. This is satisfactory. But the case has its lesson for medical men. It is quite possible for a woman who has hallucinations after being anaesthetized, to make a false charge against the attendant. Doctors, in one respect, have the advantage over dentists. The nurse, who is nearly always present when a patient is anaesthetized, is an even safer protector than another medical man, against the possibility of such an accusation. But circumstances might occur where, the operation or cause for the anaesthesia being over, a medical man might be left alone with a recovering patient. If he is wise, the medical attendant will not incur the responsibility of such a vigil. In ninety-nine cases he will win gratitude for his attentions; in the one case of the hundred he may have flung at him accusations odious enough to blast his career for ever, and wicked enough to cause him untold anxiety, worry, and expense.

DR. LATHAM OF CAMBRIDGE.

Dr. Latham, Consulting Physician to Addenbrooke's Hospital, Cambridge, and late Downing Professor of Medicine, is about to retire after practising in Cambridge for over fifty years. Last week two presentations were made to him—the one from friends in the university and town, and the other from the medical men of Cambridge and district and other medical friends. The first-mentioned presentation was made in the hall of Trinity Hall on March 15th. The Master of Trinity Hall presided, and the presentation was made by the Master of Peterhouse, who said that their friendship began when Dr. Latham was attending St. Bartholomew's Hospital. That was over half a century ago, and since then he and many others had learnt to honour Dr. Latham as a physician and as a friend, the one inseparable from the other. All present knew the distinction to which Dr. Latham had attained as a physician, and as a writer and speaker on medical subjects, and all knew also how he had helped them in many a critical hour and in many a season of grave anxiety. In his retirement he would be able to look back on a past of which any man might be proud. Of Mrs. Latham, to whom a presentation was also to be made, the Master of Peterhouse said that she not only came of a family in which there were two of the greatest administrators the British Empire had known, but was herself an administrator, in whom, after her withdrawal from the headship of Girton, many like herself had found wise counsel as well as kindness and hospitality. The presentation to Dr. Latham took the form of a large silver tray bearing the inscription, "Petro Wallwork Latham, M.D., dono dederunt amico amici medico officiis devincti MCMXII"; that to Mrs. Latham of a diamond pendant brooch. Dr. Latham, in reply, said that it was with considerable hesitation that he had relinquished his appointment as assistant physician to the Westminster Hospital to become physician to Addenbrooke's Hospital, but the work there for thirty-six years had been a source of great gratification to him. He had always striven to maintain the reputation of the hospital, and to extend its usefulness. He recalled how, after acting for six years as deputy to Dr. Fisher, then Downing Professor of Medicine, he was, on Dr. Fisher's death in 1874, elected to the professorship, and for twenty years he had discharged to the best of his ability the duties of this responsible office. Dr. Deighton, as a late student of Professor Latham and afterwards his colleague at the hospital, recalled many incidents of kindness during the past thirty years. He dwelt upon Dr. Latham's boundless energy, which years seemed hardly to have touched, and on his geniality, and concluded by moving a vote of thanks to the Honorary Secretary to the fund, Dr. A. Miller. The motion was seconded by the Mayor, and Dr. Miller, in reply, said that the response to the appeal for the fund to make the presentation had been ready and immediate. The vote was unanimously carried, and the meeting terminated. The second meeting was held in the Combination Room of Gonville and Caius College on March 14th, when Dr. Latham was presented with a pair of silver entré dishes and a parchment scroll containing the names of the medical men of Cambridge and district and other medical friends who had subscribed. The meeting, which was well attended, was presided over by Sir Clifford Allbutt, who in a very interesting speech spoke of Dr. Latham's distinguished career since the time when they were undergaduates together at Caius. Dr. Latham's reply, in acknowledgement, was equally interesting. Dr. Beverley of Norwich and Professor Sims Woodhead also spoke.

LUNG DISEASES AMONGST QUARRYMEN.

The report by Dr. James Wheatley, County Medical Officer of Health for Shropshire, contains interesting and valuable information. For 600 years work has been carried on in the Grinskill quarries, but at the date of the report one quarry alone was being worked, and only from twenty to twenty-five men were employed, of whom five were stonemasons. The stone contains 95.4 per cent. of silica. On microscopical examination the particles of stone are found to vary from $\frac{1}{10}$ to $\frac{1}{500}$ of an inch in diameter. Some of the particles are rounded and transparent, others are sharp and angular. The stone is quarried by cutting deep gutters into it by means of picks. On their removal the large blocks of stone, after a preliminary dressing by hammers and picks, are taken to sheds, where they

are further dressed by a steam mason, consisting of a number of chisels, under which the blocks are passed backwards and forwards, or they are finished by hand, each stroke of the hammer and chisel giving rise to clouds of dust. The amount of dust given off varies according as the surface of the stone is kept moist or dry. Although in the quarries the work is carried on in the open air, Dr. Wheatley found that in guttering the stone considerable quantities of dust are inhaled, as the men have to lean forward and bend closely down upon their work. As the quarrymen have good homes, live in a healthy district, receive wages above the average working population, and are on the whole a temperate class, the high mortality-rate from phthisis amongst them must be largely the result of their occupation. Some of the men retire from the quarries and stone work after a few years. Most of the men in the district who are alive after 60 have not worked exclusively in stone. Taking the average annual death-rates from phthisis per 1,000 for thirty-one years, quarrymen give 7.94 and masons 16.71, whereas the death-rates of males over 20 years of age from phthisis in the same district are only 1.47, a figure which compares most favourably with the phthisical death-rate of males over 20 years of age for 1901 in England and Wales, which was 2.37. The high death-rate from phthisis of stoneworkers, which is seven times greater than that of other people of the county, can only be explained by the dusty nature of the occupation. The numbers upon which the inferences are based are rather small. The average age at death of stoneworkers dying of phthisis was 46.3, while that of other males over 20 dying of phthisis in the same area was 40.4 years. The higher age at death of stoneworkers is an interesting fact, but taking all causes of death into consideration, non-stoneworkers have a longevity greater than that of stoneworkers by fully ten years. The opinions of Sir Thomas Oliver, Dr. Haldane, and Drs. Summers and Collis as to whether stonemason's phthisis is or is not tuberculous are reviewed. It is interesting to know that as there is no excess of phthisis among the wives of the Grinskill quarrymen and stonemasons, it would seem as if infection did not exist to any extent. To prevent lithosis among stoneworkers Dr. Wheatley recommends that means should be taken to diminish the amount of dust by watering the stone, that the inhalation of dust should be prevented by the use of respirators or otherwise, and that the men should submit periodically to medical examination, so that disease detected in an early stage may be at once dealt with.

THE BACTERIOLOGY OF TYPHOID FEVER.

A NEW element has entered into the etiology of typhoid fever—namely, an anaërobic bacillus. It is remarkable how much views with regard to the etiology of typhoid fever have changed during the course of the last few years, and if the importance of this new factor is confirmed it may lead to further modifications. Loris-Melikov[1] is the author of this new discovery. He tried the experiment of planting some faeces from a typhoid patient in broth containing bile and a piece of boiled white of egg. In this a deposit formed, with some of which a glucose-agar medium was inoculated. In a few days small transparent colonies made their appearance, and these were found to consist of non-motile, Gram-positive, sporing bacilli, which are strictly anaërobic, and grow well only at a temperature of 37° C. In view of the probably large number of undescribed anaërobic bacteria which may occur in the human intestine, such a finding is not remarkable, but the sequel is distinctly interesting. By injecting cultures of this organism into various animals it was found that it has a specific action on lymphoid tissue, and in particular on Peyer's patches in the intestine, on which it exercised a distinctly necrotic action. Unmistakable swelling and ulceration were the result. This is decidedly curious, and will undoubtedly lead to further investigation. Still more curious is the fact that these bacilli were found only in faeces from typhoid patients and not in normal stools. Of equal interest is the fact that they were agglutinated by typhoid patients' serum in a dilution of as much as 1 in 100. Loris-Melikov considers that this organism has a local necrotic action, and that it adds to the septicaemic effect of the typhoid bacillus; his researches and results naturally raise the question, Is the *Bacillus typhosus* Eberth, after all, the real and only cause of typhoid fever?

[1] *C. R. Soc. Biol.*, lxx, 1911, p. 865.

PHARMACISTS AND COPIES OF PRESCRIPTIONS.

THE question whether the pharmacist should furnish the doctor's patient with a copy of his prescription was debated at a recent meeting of the Western Pharmacists of London, when a number of physicians were present by invitation. Mr. J. D. Marshall opened the discussion by reading some letters he had received from medical men who were unanimous in expressing dislike of the practice. Dr. J. Mitchell Bruce wrote that, since the purpose for which such copies were required was usually that the patient might hand them to his friends, the custom encouraged the spirit of quackery, or the suiting of a disease to a remedy instead of a remedy to a disease. The use of a prescription by any person other than the one for whom it was originally drawn up was reprehensible. Mr. Marshall declared that, for his own part, he refused to give the copies, whenever possible. There were circumstances in which copies might legitimately be given, but, broadly speaking, the practice was not one to be encouraged—first, in the interests of the patient and his friends, and, secondly, in the interests of the doctor. The chief offenders in the matter of asking for copies were ladies, who liked to pose as amateur doctors and to dispense among their friends the medicine that had done them good. Sometimes a request for copies was quietly made by one of the parties in a pending *cause célèbre*. Another frequent excuse for such applications was a change of medical man. Mrs. A. some time ago consulted Dr. B., who prescribed a certain medicine; afterwards she requested the pharmacist to show a copy to Dr. C., who was now attending her. The speaker never gave such a copy unless Dr. C. had the permission of Dr. B. He thought that medical men had unwittingly assisted the "wholesaling" of prescriptions by allowing the use of the compressed form of medications and made-up drugs. Sir W. Abbot Anderson, one of the guests, said that the question resolved itself into a matter of copyright. So long as doctors in this country, unlike their American colleagues, had no copyright in their prescriptions, they were powerless to protect themselves. He intended in future to have a printed notice on his prescription papers to the following effect: "In the interests of the general public, I desire that no copy of this prescription shall be given by the chemist dispensing the same." Dr. Phineas Abraham thought the chief sufferers from the practice were the doctors; and, secondly, the patients, who frequently did themselves injury. He instanced the case of the wife of a patient who, noting the beneficial effect of an ointment prescribed for her husband's eczema, applied it liberally upon herself, with the result that severe dermatitis ensued. Dr. Harold Dixon pointed out that whether the prescription belonged to the doctor or the chemist, it certainly did not belong to the patient. In spite of Sir Abbot Anderson's reminder of the Scotsman who refused to pay the two-guinea fee for the doctor's advice, saying, "I'll no' tak your advice, I'll tak your medicine," he contended that the fee was essentially for the advice and not for the prescription, which latter was merely an instruction to the pharmacist. The pharmacists present also put forward their point of view, and incidentally urged that all prescriptions should be given

on a printed form, dated, and that a definite direction that the medicine was not to be repeated after a certain length of time should appear on it. Any member of the Pharmaceutical Society would respect such an injunction. One pharmacist was found to urge that the patient had not only a legal but a moral right to a copy, provided no question of poisons was involved, but he made an exception in the case of a prescription dictated by the doctor over the telephone. In such an instance the doctor probably had reasons for not giving a written formula, and the dispenser accordingly would decline to furnish a copy.

A MEDICAL "WHO'S WHO."

Circulars would seem to have been distributed widely during the last week or two asking medical men to supply particulars about themselves for publication in a book, to be published at half a guinea, with the title *The Medical Who's Who, 1912*. The circular sets out with the statement that "there is to-day no work of reference existing which deals adequately with the medical profession," a statement with which we cannot agree; nor can we accept the implication that the proposed new annual will deal adequately with the medical profession, if, as is to be gathered from the covering letter dated March, the *Medical Who's Who* is intended to give information "concerning the leading medical practitioners in London and provincial centres, as well as particulars regarding specialists and consultants." A medical directory which does not contain the names of all registered medical practitioners cannot in our judgement be described as adequate. The profession, of course, has nothing directly to do with rivalry among publishing houses, but the *Medical Who's Who* may be distinguished from other medical directories by the fact that it would appear to be intended to contain only a selected list of practitioners. If this assumption be correct, the proposed new publication will not, we believe, have the sanction of the medical profession, and we would advise all medical practitioners who receive the circular to refrain from filling it up until at least this point is cleared up.

INSURANCE COMPANIES AND MEDICAL CERTIFICATES.

An instance of the way in which some insurance companies seem to go out of their way to place members of the medical profession in an invidious position is afforded by a communication from the General Accident Fire and Life Assurance Corporation, Ltd., to a policy holder in reference to a servant who was incapacitated. The company asked for a form to be filled in by the doctor attending the servant, adding, "We hope no fee will be asked for completing this paper, but we would mention that any such charge falls to be paid by the injured party, no liability attaching the assured in this direction." Why a company should expect the medical profession to do work for nothing, in order to facilitate its business and no doubt to help it to ask lower premiums, is not apparent. If it requires certificates it should arrange either to pay for them itself or make it plain to the assured person at the time the policy is issued that he will be expected to furnish them.

Dr. Just Lucas-Championnière, who was one of Lister's first disciples, and who introduced his principles and practice into France, has been elected a Member of the Académie des Sciences, in succession to the late Professor Lannelongue. Membership of the Institute is the highest honour to which a man of science can aspire in France. M. Lucas-Championnière is Surgeon to the Hôtel-Dieu and a Member of the Academy of Medicine, and last year was President of the International Surgical Society.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Third Meeting.

(Continued from page 633.)

The third meeting of the State Sickness Insurance Committee was held, as briefly mentioned last week, on March 14th. Mr. T. Jenner Verrall was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. S. Hodgson (Salford), Miss M. H. Frances Ivens, M.S. (Liverpool), Dr. Constance E. Long (London), Dr. R. A. Lyster (Winchester), Dr. James Pearse (Trowbridge), Dr. F. M. Pope (Leicester), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Dr. W. Johnston Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norwich), Dr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. D. J. Williams, F.R.C.S. (Llanelly), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. J. Munro Moir (Inverness). *Ireland:* Dr. J. S. Darling (Lurgan), Mr. R. J. Johnstone (Belfast). *Ex Officio:* Dr. E. J. Maclean, Chairman of Representative Meetings; Dr. J. A. Macdonald, Chairman of Council; Dr. E. Rayner, Treasurer.

Apologies for absence for unavoidable reasons were received from the President (Professor Saundby), Dr. R. E. Howell (Middlesbrough), Dr. R. B. Mahon (Ballinrobe), and Dr. F. W. Kidd (Dublin).

We are enabled to publish the following account of the proceedings in anticipation of the preparation and confirmation of the minutes.

New Member.

It was reported that Dr. F. M. Pope, of Leicester, had been elected a member of the committee by the same constituency as had elected Dr. Leigh Day, resigned.

Correspondence.

A number of letters from members making suggestions to the Committee were read and dealt with, in some instances by reference to subcommittees.

Manifesto to the Public.

The following minute of the Special Representative Meeting in February was considered:

> That a manifesto on the lines of that drawn up by a committee of the South-Western Branch stating the objections of the profession to the Act, but carefully elaborated and verified, be prepared for presentation to the press, members of parliament, deans of medical schools, university tutors, and head masters of public schools.

Dr. Beaton, Mr. E. B. Turner, and Dr. Lauriston Shaw were appointed a subcommittee to draft a manifesto for the consideration of the Committee with a view to its issue at an appropriate time.

Nominations to Joint Advisory Committee.

Some discussion took place as to the principle which should be followed in selecting names from the list of nominations received from the Divisions in England, Wales, and Scotland. Regret was expressed by several members that no reply to the letter addressed to the Joint Committee of Insurance Commissioners on February 29th (Journal, March 2nd, page 510) had been received, and it was resolved that the policy of the State Sickness Insurance Committee should be to arrange direct negotiations with the Insurance Commissioners as and when in the opinion of the Committee occasion arises. The Committee having taken into consideration the fact that the number of registered medical practitioners resident in the three countries was in round numbers in England 24,000 in Scotland 3,200, in Wales 1,370, resolved to nominate twelve persons for England, Scotland, and Wales in the following proportion: Nine for England, two for Scotland, and one for Wales.

The Committee had before it the nominations made by the Divisions in England, Wales, Scotland and Ireland, of members to serve on the Joint Advisory Committee to be appointed by the Joint Committee of Insurance Commissioners. It appeared that 47 nominations had been received from England, 5 from Wales, 10 from Scotland, and 3 from Ireland.

For the convenience of the Committee the 52 practitioners nominated by Divisions in England and Wales were arranged in the eight groups of Divisions formed for the purpose of the election of members of the Council by Representatives at the Annual Representative Meeting.

Attention was called to the desirability of selecting members who had experience of various types of practice.

The following is the result of the voting, the names being arranged in alphabetical order:

ENGLAND.

	Group of Divisions.
Dr. R. M. BEATON ...	Metropolitan Counties—North and East Metropolitan Group: City, Stratford, South-West Essex, North Middlesex, St. Pancras, and Islington and Hampstead Divisions. Central Metropolitan Group: Marylebone and Westminster Divisions.
Dr. T. M. CARTER ...	Bath and Bristol Branch. Gloucestershire Branch. West Somerset Branch. Worcestershire and Herefordshire Branch. Dorset and West Hants Branch. South-Western Branch.
Dr. S. HODGSON	Lancashire and Cheshire Branch.
Dr. J. A. MACDONALD ...	Bath and Bristol Branch. Gloucestershire Branch. West Somerset Branch. Worcestershire and Herefordshire Branch. Dorset and West Hants Branch. South-Western Branch.
Dr. J. NEAL	Birmingham Branch. Staffordshire Branch. North Wales Branch. Shropshire and Mid-Wales Branch. South Wales and Monmouthshire Branch.
Dr. D. F. TODD	North of England Branch. North Lancashire and South Westmorland Branch. Yorkshire Branch.
Mr. E. B. TURNER ...	West Metropolitan Group: Richmond, Ealing, Chelsea, Kensington, and Watford and Harrow Divisions. South Metropolitan Group: Lambeth, Norwood, and Wandsworth Divisions.
Mr. T. JENNER VERRALL	Bath and Bristol Branch. Gloucestershire Branch. West Somerset Branch. Worcestershire and Herefordshire Branch. Dorset and West Hants Branch. South-Western Branch.
Dr. A. H. WILLIAMS ...	West Metropolitan Group: Richmond, Ealing, Chelsea, Kensington and Watford, and Harrow Divisions. South Metropolitan Group: Lambeth, Norwood, and Wandsworth Divisions.

SCOTLAND.

Dr. JOHN ADAMS	Glasgow Southern Division. Glasgow Central Division. Glasgow Eastern Division.
Dr. J. MUNRO MOIR ...	Northern Counties of Scotland Branch. Aberdeen Division.

WALES.

Dr. E. O. PRICE	Denbigh and Flint Division. North Carnarvonshire and Anglesey Division. South Carnarvonshire and Merioneth Division.

At its meeting on March 7th the Committee had received a letter from the Secretary to the Joint Committee of Insurance Commissioners (BRITISH MEDICAL JOURNAL, March 9th, p. 571) stating that, in response to the desire expressed by the British Medical Association, the Joint Committee would be glad to consider the names of Irish medical practitioners with a view to the appointment of one or more practitioners as members of the Advisory Committee. The following members were accordingly elected for nomination:

IRELAND.

Dr. J. S. DARLING ...	Portadown and West Down Division.
Dr. A. P. B. MOORE ...	Belfast Division.

THE INSURANCE DEFENCE FUND AND THE MEDICAL FEDERATION LIMITED.

A deputation from the Medical Federation Limited, consisting of Dr. H. S. Devis, the Secretary, Dr. G. Scott Williamson, Managing Director, and Mr. Wansbrough, solicitor, was received, and its members made statements as to the objects of the promoters of the Federation, its constitution and legal position and its relation to the British Medical Association. It was stated that the Federation was not conceived in any antagonism to the Association, but with a desire to assist the Association in raising a defence fund. In the discussion it was pointed out that nevertheless the course taken by the Federation was calculated to embarrass the Association, and to militate against the success of the Insurance Defence Fund to which the Association had asked members of the profession to subscribe. The Chairman pointed out that in view of this and other facts it was necessary to define clearly the relations of the Association and of the Federation, especially on the financial side, and that the Federation should furnish the Association with a definite statement as to the prospects and proposals of the Federation, and the way it which it was suggested that it might act with the British Medical Association.

PROVISIONAL MEDICAL COMMITTEES.

The instruction of the Representative Meeting with regard to making arrangements for assisting Divisions and Branches in the appointment of provisional medical committees in every insurance area to safeguard the interests of the profession without prejudice to the question whether these committees should later accept recognition as statutory local medical committees was further considered, and a draft memorandum dealing with all the points which it was thought probable would at present arise was approved for circulation to honorary secretaries.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

National Insurance Act.

Insurance Commissioners and the Medical Profession.

SIR PHILIP MAGNUS on Wednesday asked the Secretary to the Treasury if he could state the present position of the negotiations between the Insurance Commissioners and the representatives of the medical profession; whether any reply had been sent to their letter of February 29th, embodying the conditions under which they are prepared to co-operate in the working of the Act; and whether the Commissioners will issue such regulations as will enable them to give effect to the requirements of the medical profession as set forth in their letter.

Mr. Fell asked the Secretary to the Treasury if any progress had been made in the negotiations with the doctors as to their working under the National Insurance Act; and if the points which they have asked will be agreed to by the Insurance Commissioners.

Mr. Masterman said: The British Medical Association have availed themselves of the opportunity afforded them by the Commissioners to recommend practitioners experienced in general practice for appointment as members of the Advisory Committee, and the gentlemen so recommended will be appointed on that Committee. The letter of February 29th has been acknowledged. No regulations have, however, yet been considered by the Joint Committee on this matter, as they recognize that this is essentially a subject in which the advice and assistance of the Advisory Committee are desirable.

Sir P. Magnus asked when a reply was likely to be sent and whether the Commissioners or Health Committees had power to grant the requirements of the medical profession.

Mr. Masterman said: I do not know that any reply will be sent except an acknowledgement of the letter, because members of the British Medical Association are going to be appointed on the Advisory Committee which will have to consider the whole question.

Suspension of Medical Benefit.

Three weeks ago Mr. Masterman, in reply to a question by Sir Philip Magnus, stated that "the Act allows . . . that alternative arrangements shall be made by the Insurance Committees or the Commissioners, or that medical benefit shall be suspended or the money equivalent returned to the insured person."

On Wednesday last Sir Philip Magnus asked the Secretary to the Treasury whether, in the event of the Insurance Committees or the Insurance Commissioners being unable to satisfy the requirements of the medical profession and consequently deciding to adopt the alternative proposal of the Act—namely, to suspend medical benefit and to return to the insured person the money equivalent to such benefit—the insured person will be free to use the money for any purpose he may think fit; and, if so, whether the insured person would necessarily receive under the Act any medical benefit whatever.

Mr. Masterman said: If the normal scheme of medical benefit laid down in Section 15 is not carried out, not one, as suggested by the honorary member, but several alternatives are provided by the Act. These include power for the Commissioners themselves to authorize the local Insurance Committees to make other arrangements for providing medical benefit, or for themselves making such arrangements as they think fit, or for suspending medical benefit for any period, and paying to each insured person an equivalent sum. Even if the last course were adopted the insured person would be free, though not compelled, to make his own arrangements for medical treatment.

Mr. Fell asked if the appointments that were being made under the National Insurance Act were being made provisionally, and were subject to determination if no agreement was come to with the doctors who were to work the Act.

Mr. Masterman answered in the negative. The coming into operation of the Act was not dependent upon any agreement that might be made with representatives of the medical profession.

Mr. Fell asked what was the use of the appointments if those who were going to carry out the Act refused to do so.

Mr. Masterman said: I do not in the least understand that question. The appointments are made in all the four kingdoms, and in Ireland there is no suggestion of medical benefit. If necessary the Act will go on without medical benefit.

Sickness and Disablement Benefit.

Mr. Chiozza Money asked what was the margin in respect of the sickness and disablement benefits provided by the statutory contributions under the National Insurance Act.

Mr. Masterman said that the margin contained in the premium of 7d., according to the last report of the Government actuaries, was 0.42d. for men and 0.53d. for women. The weekly contributions for sickness and disablement benefits were given as 3.17d. for men and 2.55d. for women. Treating the margins as applicable to these benefits, therefore, they represent additions of 13 per cent. for men and 21 per cent. for women.

Asked if that percentage was based on an allowance of 4s. 6d. per head for the doctors,

Mr. Masterman replied that the actuarial statement, as far as medical benefit was concerned, was an allowance of 6s. per head. He thought there was no separation as regards drugs.

Sanatorium Benefit.

The Marquess of Tullibardine asked whether any part of the contribution payable by the workman, the employer, or the State under the National Insurance Act was available for the provision of sanatorium benefit for the wives and children of insured persons; and, if not, how was such treatment to be provided?

Mr. Masterman said that under Section 17 (1) Insurance Committees could extend sanatorium benefit to the dependents of insured persons. In such cases the cost of their treatment might be met from the general funds available for sanatorium benefit. These included the sums specified in Section 16 (2) (*a*), which were contributed jointly by employers, employees, and the State, the sums specified in Section 16 (2) (*b*), which were contributed by the State, and any further sums which might be provided under Section 17 in equal moieties by the State and local authorities.

Chief Commissioner for Scotland.

In reply to Mr. Watt, the Financial Secretary to the Treasury stated that the Chairman of the Scottish Commission (Mr. Leishman) was appointed as an established civil servant at a salary of £1,800 per annum. He was qualified by a long and varied experience of business and of public work. At the time of his appointment he was occupying the position of honorary treasurer of the city of Edinburgh. He was strongly recommended by men well qualified to speak, and he regarded it as fortunate that the Government had been able to obtain the services of so able an officer. He had not inquired as to his income before his appointment, nor did he propose to make such an inquiry.

Housing in Town and Country.

On March 15th an interesting discussion arose when Mr. Griffiths-Boscawen moved the second reading of his Housing of the Working Classes Bill. The mover showed that both in town and country the Housing Acts so far had done little good, and that at the present time there existed in cities and on the country side appalling instances of bad housing associated with a high death-rate and a miserable population. He asserted that the condition of the country districts had been made worse by the passing of the Housing and Town Planning Act. Under that Act increased powers were given for closing insanitary houses, but when the houses were closed no fresh houses were built. Under the Housing Acts 116 cottages had been built by local authorities in the last three years, and 1,344 houses had been closed. The state of housing called for very drastic treatment. Some persons blamed the local authorities for the inefficient working of the Housing Acts. He admitted that there were some local authorities who neglected their duty, and that there were vested interests occasionally which prevented the Housing Acts from being put into force. While the President of the Local Government Board had always shown an anxious sympathy to help forward proposals towards bettering the present condition of affairs, he maintained that from the House of Commons point of view the Local Government Board itself was the most inefficient body ever known. Its red-tape delays were appalling; it was the true Circumlocution Office. If a local authority refused to do its work the Local Government Board could only proceed by mandamus, which the Chancellor of the Exchequer had described as "the clumsiest, rustiest weapon in the whole armoury of British law." The bill proposed that the Local Government Board should have power, after application to the Court, to act in case of default by the local authority and to charge the expense to the locality. His bill proposed practically to set up a new housing department—a housing commission composed of experts in urban and rural housing and in the duties of medical officers of health, who would go about the country and see where action ought to be taken, and if it was found impossible to get the local council or four ratepayers to take action under the Act of 1909, to take action themselves. He proposed that State aid should be given for slum clearances and for building houses in the country, as was done under the Irish Labourers Act. He contended that under his bill the work could be done more cheaply and more efficiently than under the existing law.

Mr. C. Bathurst supported three parts of the bill very strongly. The first was the establishment of a Housing Department of the Local Government Board superintended by an urban and rural housing expert, and by a gentlemen possessing the qualifications of a county medical officer of health. The second was a grant-in-aid from the Exchequer towards removing the deadlock which existed owing to the reluctance and inability of rural district councils to take action. The third was Clause 6, which dealt with the relaxation of by-laws with the approval of the Local Government Board in districts where those by-laws were clearly standing in the way of an improvement of housing conditions. The main opposition to the bill would be against the grant-in-aid, but he quoted the experience in

Ireland as conclusive in favour of this course. There it had been made a national question, and it would have to be treated on the same lines in this country.

Mr. Wedgwood moved that the bill be read a second time that day six months and ridiculed it as the first-fruits of Tory democracy, a bad bill rich in its badness. It opened with a new department: more jobbery, more fat salaries for cadets of landed families, a new branch of the Local Government Board, although that Board could not manage the business.

Mr. Dundas White seconded the amendment, and condemned the bill, which was supported by Mr. Sutton and by Mr. W. H. Forster. After several other speeches,

Mr. Burns defined the attitude of the Government to the measure. He said that the Local Government Board had done a great deal in the direction of housing reform, and he was very grateful to everybody who had spoken and to reformers generally for the steps that they were taking to give increased prominence to this social problem. But it was so generous to be philanthropic with other people's money and to ask for a dole of £500,000 to-day, to be followed up by one of £1,000,000 next year and £1,500,000 the year following. They were not justified in pulling up the Housing Act, which was only two years old, and had hardly set its roots in the ground, to see how far it had grown. It had been said that the Local Government Board had done nothing in the last six years with regard to housing loans and schemes, and great play had been made with what had been done in Ireland, but the £7,500,000 was spent there under totally different conditions. Local authorities in England and Wales, without a subsidy from rates or taxes and charity rents, had spent as much per annum by ratio. He deplored the lack of energy of local authorities, both urban and rural, but it was not true to say that nothing had been done with regard to rural housing. From 1890 to 1909, before the passing of the Act, only eight rural councils took action. In the last two years thirty-five had acted, and that was almost in the last fifteen or sixteen months, because they had not known what their power was. In fifteen months the rural district councils had issued 17,000 notices for the repair of houses; apart from repair work, there had been in the last three years 13,000 representations to the rural district councils, of which 9,000 were last year; for closing, demolition, and repair 20,000 separate actions had been taken in rural areas in the last two years. It was said, "It is true you have built more houses in the rural areas, but what is the good of that when you have closed 1,344?" That was not the fact. Closing orders were issued against 1,344, all of which, with the exception of 126, instead of being demolished, had been put into a condition of habitable repair. With regard to the two main principles of the bill, he ventured to predict that before five years had passed there would be strong resentment in all quarters of the House and the country at the power of the Imperial Parliament in relation to local authorities being interfered with and superseded by *ad hoc* Commissioners, who had neither the knowledge nor experience of the Department, and would be outside its authority. It had been stated that under the Liverpool improvement scheme 75 per cent. of the dispossessed people had been rehoused on the spot, and that the criminal statistics had fallen in consequence. The criminal element was in the 25 per cent. that had gone elsewhere. Dr. Hope, the Medical Officer of Health for Liverpool, and one of the finest officers in the kingdom, had in fifteen years enormously reduced the mortality from typhus, typhoid, phthisis, and other diseases; were hon. members going to supersede his splendid work by some gentleman from London who knew as much about Liverpool as a dog did about his parents? The only way in which the House could act was through the local authorities. The 25,000 local authorities in England and Wales were all increasingly suspicious of Commissioners. The proposed annual grant of £500,000 ought not to be set up on the motion of a private member. There were 1,250,000 men in the United Kingdom engaged in the building trade, and over £100,000,000 in wages or profits taken by masters and men. What was the good of half a million—less than one-half of 1 per cent.—on an industry that employed so much capital? Charity rents from rates or taxes were nothing more nor less than a bonus in aid of low wages, and would be used and exploited by unscrupulous employers of labour to that end. At the present moment private landlords, co-partnership associations, and co-operative associations were extending their influence through urban areas into the rural districts. If they gave a blank cheque in favour of housing schemes they would discourage all this enterprise which was covering the whole kingdom. These bodies would wait until a grant came, and the result would be disastrous upon all aspects of the housing problem. In the rural districts the councils were building on economic lines. But under the Small Holdings Acquisition Act he found that in twelve years the London County Council sanctioned eighteen loans, that two borough councils sanctioned thirty-three loans, so that for fifty-two cases there was less than £10,000. In England and Wales during the same period there were 922 houses at a cost of £210,000, and one district—Ilford—had built 40 per cent. of the total number of houses while receiving about 45 per cent. of the money. Of the 119 men in Ilford who had redeemed their houses under the Act, 20 to 25 per cent. had acted as sellers again, because they had to quit the district in order to follow their work. The mobility of labour in this country was forgotten, but this bill was based on the permanency and not on the mobility of labour. In advising the House as to the course it should take, he showed that it was only by the aid of a responsible Minister that an amending bill to remove defects could be pushed forwards. This bill, then, could not get any further forward. There was another reason. The Chancellor of the Exchequer, in deference to the views of all sections of the House, had instituted a Committee to revise the subventions from the Imperial Exchequer to the local authorities and to examine the question whether there should or should not be a subsidy for housing in rural or urban areas, and for water supply and drainage, the central authority making some contribution to the local authority. That was the way in which this question ought to be handled—namely, on the initiative of a responsible Minister. He viewed the bill as an indication on the part of the House of Commons of a desire for something more to be done in the direction of housing reform, and he construed the criticism of his department as being due to a desire to strengthen its power and authority. He would, therefore, ask the House to do no more than to give a second reading to the bill, keeping it, however, within its control.

After a short speech by Mr. Bonar Law, Mr. King rose to continue the debate, but the closure was granted, and the amendment to put off the second reading was negatived and the bill read a second time without a division. Mr. Booth, representing the opponents of the bill, moved that it be committed to a Committee of the whole House. This was defeated by a majority of 29, amid Opposition cheers, and the bill will go to a standing Committee.

Public Health (Sewers and Drains) Bill.—This bill proposes to amend the Public Health Acts with respects to sewers and drains. It was presented by Mr. Harmood-Banner, supported by Sir Thomas Roe, Sir Charles Nicholson, Mr. George Thorne, Sir Alfred Cripps, Sir Luke White, Lord Alexander Thynne, Mr. Hamar Greenwood, and Mr. Middlebrook, and put down for second reading at an early date.

Dogs' Protection (No. 2) Bill.—This is a second bill to prohibit experiments upon dogs. Presented by Sir Frederick Banbury, it is supported by Mr. George Greenwood and Mr. Field, and will be put down for an early second reading.

Inebriates Bill.—This is a Government bill to consolidate and amend the law relating to inebriates. Presented by Mr. Ellis Griffith, it is supported by Mr. Secretary McKenna, and will be brought on for second reading as soon as possible.

A CORRECTION.

BY an unfortunate clerical error in proof a sentence was appended to the report of the question and answer in the House of Commons on anthrax, published in the JOURNAL of March 9th, p. 570, which did not belong to the subject. The sentence related to an answer to Mr. Lynch, who inquired whether the Home Secretary was in a position to make a statement as to the person or persons it was intended to appoint to make the investigations promised into the circumstances of William Ball at Pentonville Prison.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER.

Medical Attendance after Next July.

Attempts are now being made in several districts about Manchester by large works and various societies to obtain men to undertake medical attendance on their workpeople or members for the six months' interval that will elapse from the commencement of the Insurance Act in July to the time when insured persons will first become entitled to medical benefit—that is, January 15th, 1913. Those societies and works that have medical officers at present are expecting them to continue their present contracts until January, 1913, receiving payment as at present until the medical benefit under the Act actually comes into operation, when, if panels are formed, the present contracts, as far as the insured are concerned, would automatically come to an end. But numerous other societies—such as trade unions and combinations of works that have no medical officers at present—are intending to apply to become approved societies, and wish their members or workpeople to have the right to medical attendance at once, as soon as their contributions to the insurance fund commence, without the initial waiting period of six months. That, at any rate, is the explanation given, and in their circulars asking medical men to state on what terms they will undertake the work, it is distinctly stated that the contract is only to be for this six months, until the Insurance Committees are actually providing medical attendance. But it is impossible to avoid feeling that there are other motives behind this movement. There is a widespread idea among the officials of works and societies that, though a sufficient number of doctors to form a satisfactory panel may not be found in many districts, the societies may still be able to find sufficient doctors to serve their own purposes, especially if they give them a special appointment of some value. It would seem that to accept any of these proposed appointments on any terms whatever would tend to defeat the policy of the British Medical Association, which is not only to obtain an adequate fee but to escape once for all anything like friendly society control, or, what comes practically to the same thing, control by approved societies.

The Warehousemen and Clerks' Provident Association.

At the annual meeting of the Manchester Warehousemen and Clerks' Provident Association held last week, the recommendation of the Board of Directors that the association should apply to become an approved society under the Insurance Act was carried unanimously; but when the meeting came to discuss the other recommendations of the directors as to four proposed new schemes of contributions and benefits, a scene of disorder commenced which lasted nearly three hours, the speakers having the greatest difficulty in obtaining any consecutive hearing. The chief proposal was that the present contribution of 2s. a month should be reduced by 6d., so that each member would pay 1s. 6d. a month as a voluntary contribution, in addition to the 4d. a week paid to the State scheme. For the reduced contribution of 1s. 6d. to the association, members would get all the present benefits except medical attendance, but it was proposed that the association should pay no sickness benefit for the first six days of sickness, though otherwise sickness benefit would be payable as usual provided that the member was not in receipt of salary. The secretary said that the State would relieve the association of the duty of providing medical attendance, and this relief represented the 6d. which it was proposed to take off the monthly subscription. Great opposition was expressed to the proposal not to pay sickness benefit for the first six days' sickness, and it was argued that the reduction of the monthly subscription by 6d. was not enough, and that in fact the 2s. a month now paid ought well to cover both the association and the State benefits in view of the contributions of employers and the State. The secretary explained that if the proposal were not adopted the members could as an alternative continue to pay the present 2s. a month in addition to the State 4d. a week, and receive the medical attendance provided by the association, but the directors proposed to abolish the present contract system with the doctors and allow members to call in any doctor they liked, and his fees would be refunded to the members if they did not exceed 3s. 6d. a visit. The members would also be entitled to specialists' attention which might not be provided under the Insurance Act. After a long and excited discussion the proposal of the directors was rejected, not a single hand being held up in its favour. The other proposals of the directors referred to the formation of a section for junior members, a scheme for new members, and another for members receiving a salary of over £160 a year; but all the recommendations were rejected by overwhelming majorities.

It would appear that the directors had felt that the members would welcome free choice of doctors, who would be paid per attendance rather than on the present contract system. In the alternative scheme, however, under which members would continue their present subscription of 2s. a month in addition to the State contribution of 4d. a week, they would be entitled to medical attendance from both sources at once—that is, both from the association and the national insurance—and it was not explained how this was to be arranged. It would seem as if it were contemplated, though this was not stated, to take advantage of Clause 15 (3) of the Act, under which members might be "allowed" to make their own arrangements for medical attendance with their own private doctors, receiving a contribution from the Insurance Committee towards the cost, and in that case the association would pay anything more required to meet the doctors' bills, including attention by specialists, and provided that the doctors' fees did not exceed 3s. 6d. a visit. An arrangement of this sort would relieve the national insurance of having to pay more than 6s. a year, as anything more than this required to meet the doctors' bills would be paid by the association. But as already stated, the meeting would hardly listen to any of the directors' proposals, and came to an end in some confusion.

BIRMINGHAM.

The Queen's Hospital.

The committee of this hospital states in its annual report that it is unable to estimate with any certainty what effect the National Insurance Act will have on the finances of the hospital, but calls the attention of subscribers to the outstanding fact that, whatever happens ultimately, the annual expenditure will not be decreased by the new Act, but will in all probability be increased. The Act as passed leaves the voluntary hospitals in a very uncertain and unsatisfactory position. It will not reduce the number of in-patients, because it makes no provision for the treatment of serious illness; nor will it appreciably reduce the out-patients, the majority of whom are married women, children, and other uninsured persons. The number of in-patients in 1911 was 3,172, and of out-patients 39,743. The expenditure was £16,251, being an increase of £214 on 1910. The balance of expenditure over income at the close of the year was £5,016 19s. 10d., as compared with £5,200 in 1910. The endowment of the hospital—about £40,000—is not large, the income from investments being only about £1,900. The adverse balance in the accounts during the last two years has been liquidated by a transference of cash from the suspense account to the current account.

The committee reported that 260 cases had passed through the almoner's hands, and had been dealt with to its satisfaction. The actual work done had been of great benefit to the patients, and indirectly to the general community. The assistance recommended for the cases was provided by the Charity Organization Society, and to a smaller extent by the City Aid Society and other institutions. Several members of the committee had subscribed the amount of the almoner's salary, so the experiment had not increased the annual expenditure. There was no reason to suppose that any considerable financial saving had been made to the hospital, and the question whether the work of the almoner should be continued, and the cost of it added to the standing charges of the hospital, had been deferred until a further report on the work done has been received.

BIRMINGHAM HOSPITAL SATURDAY FUND.

The total receipts for the past year amounted to £21,940, and were £1,564 in excess of the previous year's collection, being the largest increase recorded for fourteen years. The number of contributing firms of manufactories and industrial establishments was 2,224, as compared with 2,188 in the previous year. In October last £10,000 was voted for distribution among the medical institutions of the city towards the cost of the free work they do. The Hospital Saturday Fund has three convalescent homes of its own. At Tyn-y-Coed, Llanrhos, near Llandudno, the convalescent home for men, the number of patients admitted during the year was 1,315, as compared with 1,230 in the previous year. At Marle House, Llanrhos, the women's convalescent home, there was also an increase, the number being 1,397, against 1,388. At the Red House, Great Barr, the convalescent home for children, 577 children and 143 women were admitted, as compared with 615 children and 110 women in the previous year. The total number of patients, therefore, was 3,432, as against 3,343 in 1910.

LONDON.

SITE AND SENATE HOUSE FOR THE UNIVERSITY OF LONDON.

IT was announced on March 15th that a friend of the University of London, who desired to remain anonymous, had offered to Viscount Haldane, the Chairman of the Royal Commission on University Education in London, a contribution of £100,000 towards the acquisition of the site of which, as announced in our issue of February 24th, p. 451, the Duke of Bedford had offered the option for the purpose of providing a suitable home for the University. The site, which is immediately north of the extension of the British Museum, fulfils one of the conditions laid down by the Commissioners, inasmuch as it is in a central position. The Drapers' Company has offered to erect a senate house and administrative offices to form a distinct portion of the new buildings for the University of London, as proposed in the report of the Royal Commission dated December 15th, 1911, at an approximate cost of £60,000, provided that a suitable site is acquired, and the other buildings referred to by the Royal Commission as necessary for the University head quarters are otherwise provided for within a reasonable period.

BRITISH RED CROSS SOCIETY.

The County of London Branch of this society is desirous of establishing divisions in all the Metropolitan boroughs, and St. Marylebone has the credit of being the first borough which formed Voluntary Aid Detachments in connexion with the ambulance classes which have for years been held at the Polytechnic in Regent Street. On the evening of March 14th one men's detachment and five women's detachments were officially inspected by Colonel W. G. A. Bedford, C.M.G., R.A.M.C., the recently-appointed principal medical officer of the London Division, and also by Colonel Valentine Matthews, V.D., the County Director of the London Territorial Force Association. After the inspection a display took place in the large hall of the recently reconstructed Polytechnic, which was well attended by the public, who filled the spacious galleries. The detachments acquitted themselves well in various first-aid tests, in forming a stationary hospital of eight beds, and in treating "wounded" scouts, who were conveyed on improvised stretchers and chairs to the hospital beds or to an ordinary country cart in which the stretchers were cleverly slung. Improvised filters were also prepared from sheets and sacks supported by the poles of the stretcher-bearers, and an improvised operating tent was erected, and the patients were fed with materials cooked on an improvised fireplace. The whole arrangements were under the control of Colonel James Cantlie, whose skill in ambulance work is well known. Praise of the various arrangements was universally accorded by Mr. J. Lynn Thomas and other county directors who were interested spectators. Laudatory speeches were made by Sir Frederick Treves, the Mayor of St. Marylebone (Mr. E. R. Debenham), and others.

We are given to understand that it is by no means difficult to form voluntary aid detachments of women, but that men seem to be shy in coming forward for this work. More medical men, too, are required to act as commandants of the detachments, and, judging by the enthusiasm witnessed at this display, and at other inspections which have lately taken place in London, it seems safe to recommend this work to those who have a little spare time, and who wish to feel that they are taking part in a patriotic endeavour to help the War Office. During the last two years some forty-five detachments have been raised in London, besides those formed by the City of London, which has a special branch of its own. As stated in a recent issue, there are already in England, Scotland, and Wales more than 1,100 voluntary aid detachments, with a total membership of over 9,382 men and 22,778 women. Those who desire to know more about the Red Cross movement in London can obtain all information by writing to the County Secretary of the Red Cross Society at Craig's Court House, Whitehall.

SOUTH WALES AND MONMOUTHSHIRE.

KING EDWARD VII HOSPITAL, CARDIFF.

AT a meeting of the Board of Management on March 13th General Lee was re-elected Chairman.

A discussion took place as to the advisability of establishing a nursing staff for private work; the medical board and the nursing committee had recommended that such a course should not be taken. Colonel Vaughan thought that a private nursing staff would be useful and profitable, and eventually it was decided to discuss the question further.

The committee decided to close the present children's ward temporarily and to open twenty-five beds in the new wing. Colonel Vaughan announced a donation of 4,000 guineas by a gentleman as a thank-offering for the recovery of his mother, and said that, in spite of the Insurance Act, the board intended to open every bed possible, and was enabled to do so chiefly by the generosity of half a dozen people. In this connexion the board decided to ask Mr. William James Thomas to open the new pathological block as some recognition of his munificent gifts to the infirmary. The board also decided to continue the system under which each patient who can do so pays 6d. a day as an in-patient and 3d. for registration as an out-patient. These small amounts mean an income of more than £1,000 annually. The members of the board inspected the new wards now completed and furnished.

It is interesting to note at this time that these wards have been very largely provided and equipped by the generosity of people interested in collieries, although letters have lately appeared in the local press accusing the coalowners of leaving the infirmary to beg for funds from the workmen. The donations of Mr. W. J. Thomas alone amount to about the same sum as is contributed by colliery workmen in four years.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE INSURANCE ACT MEDICAL BENEFITS.

THE Irish National Trade and Labour Benefit Society, recently established under the Insurance Act in co. Wexford, has held a number of public meetings during the week, at each of which strong resolutions were passed unanimously demanding an extension of the medical benefits to Ireland.

REGISTRAR-GENERAL'S RETURNS.

According to the Registrar-General's returns for the last quarter of 1911, recently published, there were 23,875 births, equal to an annual rate of 21.8 per 1,000 of estimated population. The highest rate was 29.1, for Dublin county borough, and the lowest 17.1, for Dublin county. The birth-rate in Ireland is 0.2 below the average rate for the corresponding quarter of the ten years, 1901–1910. The deaths are 660 below those registered in the corresponding quarter of the previous year; they number 17,025, representing an annual rate of 15.6 per 1,000, and are 0.8 below the average for the fourth quarter of the ten years, 1901–1910. The death-rate varies from 11.4 in Mayo to 23.8 in

Dublin county borough. According to the returns obtained from the Royal Irish Constabulary and the Metropolitan Police, who acted as enumerators at the several Irish seaports, 4,791 persons emigrated. Compared with those for the corresponding quarter of 1910, the returns of pauperism furnished by the Local Government Board show a decrease of 2,422 in the average number of workhouse inmates on Saturdays during the quarter, and a decrease of 14,622 in the average number of persons on outdoor relief. These figures show a combined decrease of 21.9 per cent. under the average of the corresponding quarter for the last ten years. The annual marriage-rate (4.8 per 1,000 of the population) represented by the marriages registered during the third quarter of 1911 is 0.1 below the average for the corresponding quarter of the preceding ten years.

Royal Victoria Eye and Ear Hospital, Dublin.

The original plans for the Royal Victoria Eye and Ear Hospital, Dublin, provided for 120 beds for intern patients; but the funds did not allow of the whole being completed at once, and when the hospital was opened eight years ago it contained only 82 beds. The special dispensaries for extern patients were opened at the beginning of last year, and since then there has been an average daily attendance of over 150 extern patients. During the last year there has been a daily average of more than 82 patients in the hospital, and temporary beds have been used. The board has now decided to make a further addition to the hospital, which will provide 18 more beds at a cost of about £5,000. It seems a pity that the good work which is being done in this hospital for the sick poor from all parts of Ireland should be hampered by the want of sufficient support from the charitable public. It ought to be possible, as the result of a special appeal, to obtain the additional £4,000 necessary to enable the hospital to be completed according to the original plan.

Vaccination Defaulters.

At the last meeting of the board of guardians of the North Dublin Union a town councillor stated that, notwithstanding the resolution passed by the guardians deciding not to prosecute vaccination defaulters, notices had been sent out from the doctors to at least one hundred residents in his ward threatening prosecutions. The Clerk said the Local Government Board had been asked to give their sanction to that resolution, but had not done so yet. There could be no prosecution until the board of guardians gave the order, and, as he was the executive officer, the board might rest assured that prosecutions would not take place.

Medical Fees in Workhouses.

Recently the Ballymahon Board of Guardians charged a paying patient in the workhouse hospital, in addition to the usual hospital charges, a special fee of £1 1s. for the attendance of a second doctor in consultation with the medical officer of the workhouse in his case. After recovering the patient paid the hospital charges, but refused to pay the special fee for consultation. The guardians laid the facts before the Local Government Board, which has written stating that, according to Section 4 of the Act 25th and 26th Vict., chap. 83, the amount chargeable in such cases cannot exceed the special average cost of maintenance and medical treatment, and therefore the proposed special medical fee was an illegal charge.

Stewart Institution for Imbecile Children.

At the annual meeting of the council of this institution the Medical Superintendent reported that at the commencement of the year there were 74 boys and 45 girls in the imbecile department, and that since then 9 boys and 6 girls had been admitted and 11 boys and 3 girls had been discharged, while 3 boys and 2 girls had died, leaving a total in the department of 69 boys and 46 girls—in all, 115 inmates. Dr. Walter Smith, in seconding the adoption of the report, impressed upon the voters the propriety of voting for cases in which there was a chance of cure rather than for impossible and hopeless cases, as if the institution were filled with hopeless cases it would not be doing the work originally intended.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Society of Antiquaries of Scotland.

At the monthly meeting of this society on March 11th Mr. R. Scott-Moncreiff read a paper on the incorporation of the surgeons and barbers of Edinburgh. From 1505 to the beginning of the seventeenth century the two crafts existed as one corporate body, possessing the same rights and privileges; then dissension arose between them, the surgeons aspiring to higher social rank. Being in the majority in 1648, they passed an Act excluding barbers unless they qualified in surgery, and the next year the town council, finding that the scarcity of barbers in the city obliged the citizens to resort to the suburbs to be "trimmed and barberized," warned the surgeons that they must admit a sufficient number of barbers into their corporation. This was done, but in 1694 the surgeons obtained a new gift under the Great Seal, conjoining with them the apothecaries, and ignoring the barbers. This was confirmed by Act of Parliament in 1695, but in 1718 the barbers raised an action for the restitution of their rights, but the decision, after prolonged pleadings, while leaving them members of the corporation, considerably restricted their privileges. Special reference was made to two interesting points in the original incorporation, the first being the necessity for the applicants for admission to be well versed in astrology, as well as anatomy, so as to be able to bleed properly, and the second the monopoly of making and selling aqua vitae, which was secured to the members of the corporation. At the same meeting Mr. Cash made mention and showed photographs of the St. Fillans "curing stones," which are still kept at the mill, formerly called St. Fillans Mill, of which it is recorded that "it goes well all the year round, except on St. Fillans day." The stones are kept in a recess in the wall, and are smooth, water-worn pebbles, some of them having obviously served as socket stones for the spindle of the small upper millstone of former times. It was the privilege of the matron of the mill to carry them abroad for use by rubbing the part of the body affected with the particular stone efficacious for that part. The villagers used to assemble on St. Fillans day annually to bed St. Fillans curing stones on fresh straw, and an old man told the late Dr. Macmillan that he had seen this done. In another paper Mr. James Ritchie gave an account, with photographs and slides, of the memorials of the widespread panic caused by the resurrectionists of the early part of the nineteenth century, which still remain in the churchyards of different parish churchyards of Aberdeenshire in the shape of watchhouses, mortsafes of various kinds, and public vaults.

Correspondence.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS, ENGLAND.

Sir,—With your kind permission, I should like to draw the attention of the readers of the British Medical Journal to certain improvements which are being effected in connexion with the Museum of the Royal College of Surgeons of England. The following letter, which is self-explanatory, is being issued by the President of the College to ophthalmic surgeons throughout the country. It is possible, however, that medical men who are not specially in ophthalmic practice may be able to help with the object mentioned in the letter.

Royal College of Surgeons of England,
Lincoln's Inn Fields, London, W.C.,
March 25th, 1912.

Dear Sir,

The Council of the Royal College of Surgeons of England have lately resolved to revise completely that part of the Museum which illustrates injuries and diseases of the eye, and has entrusted the revision to Mr. Stephen Mayou, F.R.C.S.

The methods of preservation and mounting of specimens have improved so much since the present collection of eye preparations was made by Mr. Charles Bader in 1860-1862

that it will be necessary to replace the majority of existing specimens.

As President of the College, may I ask you to assist the Council by presenting to the Museum such specimens as may help to give a complete representation of the Pathology of the Eye and of the various structures accessory to the function of vision?

Preparations should be forwarded to the Conservator of the Museum, who will acknowledge their receipt and report on them if desired.

I am, Dear Sir,
Yours faithfully,
(Signed) R. J. GODLEE,
President.

The Council of the College has also resolved to establish a medico-legal collection in connexion with the Museum, there being at the present time no standard collection in England. The scheme of classification which is to be adopted for this collection is that elaborated by Sir Henry Littlejohn and Professor Harvey Littlejohn in connexion with the museum attached to the department of forensic medicine in the University of Edinburgh. The scheme of classification is as follows:

I. Specimens illustrating sudden or unexpected death from natural causes—for example, conditions of the heart, brain, stomach, and intestines, larynx, etc. (latent disease).
II. Deaths from mechanical violence.
  (*a*) Rupture of organs.
  (*b*) Wounds:
    Contusions.
    Incised (cut throat).
    Stabs.
    Lacerated.
    Wounds of genital organs.
  (*c*) Injuries and results of violence to brain.
  (*d*) Fractures:
    Skull.
    Long bones, etc.
III. Death from asphyxia.
  (*a*) Drowning.
  (*b*) Hanging.
  (*c*) Strangulation.
  (*d*) Choking.
  (*e*) Overlaying—enlarged thymus gland.
IV. Specimens illustrating identity and *post-mortem* conditions—for example:
    Tatto marks.
    Malformations.
    Finger prints.
    Foot prints.
    P.M. digestion of stomach.
    ,, discolorations and changes.
    ,, injuries.
    Adiposis.
    Mummification, etc.
V. Specimens illustrating:
    Pregnancy.
    Delivery—injuries, etc.
    Abortion.
    Rape, virginity, etc.
VI. Death from burns.
VII. Death from firearms.
VIII. Infanticide.
IX. Effects of poisons.
X. Specimens of all chief poisons.
XI. Weapons of various kinds.
    Photographs.
    Microscope slides of various kinds in relation to all the above.

There are already, in various parts of the Museum, specimens which illustrate some of the sections included in the above list, but as regards the majority of these the College must depend on the public spirit and generosity of medical men. This letter is written in the hope that your readers may be induced to help in building up this most needful collection.

The Conservator of the Museum will gladly answer inquiries regarding the projected medico-legal collection, and acknowledge the receipt of specimens.

There is another department of the Museum which is altogether dependent on medical men—namely, that which illustrates the development and growth of the human embryo and fetus. In recent years the methods of preservation of such specimens have become so much more satisfactory that it will be necessary to replace some of the present specimens and to add many others.

The Conservator will gladly acknowledge the receipt of such specimens and give a descriptive account of them if the donor should so wish. It is of the utmost importance that the full history relating to the age of such specimen should be known.

You will render the Museum of the College a service if you will be so good as to bring these matters before your readers.—I am, etc.,

A. KEITH,
Conservator of the Museum of the Royal College of Surgeons of England.

Lincoln's Inn Fields, London, W.C., March 19th.

THE TREASURY COMMITTEE ON TUBERCULOSIS.

SIR,—However true the conclusion may be which is arrived at by the statistics quoted by Dr. Eder, that 95 per cent. of children are infected with tuberculosis, the statement is apt to cause confusion in some minds. Tuberculosis in the adult almost invariably means pulmonary tuberculosis, and the human mind, consciously or subconsciously, when tuberculosis is referred to in children, frequently, transfers its idea of tuberculosis in the adult to that of the child.

Whether von Pirquet's test is or is not reliable as a test of infection, tubercle bacilli must be so common that they can scarcely fail to have entered the bodies of all children beyond a few months of age, and in the majority of instances probably have been in sufficient quantity to produce a local reaction to their presence. Yet it appears to me that to associate such a local infection with development of disease in later life would be a mistake. Infection of the lungs in young adults is obviously a distinct infection, occurring, as my fellow-student, Dr. H. J. Campbell, pointed out years ago, at the position in the lungs of most marked air stasis—that is to say, where tubercle bacilli entering by the air find a resting place.

In children, as is well known, infection of the lungs occurs chiefly through the medium of the bronchial glands, and when the disease invades the lung from the glands it almost invariably spreads rapidly and is soon fatal. If Dr. Eder and others are correct, that 95 per cent. of children have been infected with tuberculosis, the majority of those will have been infected in the bronchial glands. Should, however, tuberculosis of the lungs develop after school age, or in the last two or three years of school age, the infection will be quite distinct from any which may have taken place in the bronchial glands.

Dr. Eder mentions what is so often stated to be the case, that tuberculosis frequently follows measles. My *post-mortem* experience leads me to believe—though I have not especially investigated the point—that the frequency of the association is overstated. It has sometimes ocurred to me that bronchial dilatation—a not uncommon sequence of measles which is often diagnosed as tuberculosis—may partly account for the oft-repeated statement. It may be added that measles is so common that in most fatal cases of acute or subacute tuberculosis of the lungs in children we may expect the disease to have been previously present. Measles complicated by bronchopneumonia shares with every other inflammation within the chest the liability to disturb and spread any tubercle bacilli which may be present in caseous bronchial or mediastinal glands. Apart from this, however, the influence of measles in aiding infection, to me, is not clear.—I am, etc.,

March 15th. THEODORE FISHER.

LEPROSY IN THE UNITED KINGDOM.

SIR,—With reference to the remark on page 568 of your issue of March 9th to the effect that no case of leprosy originating in England has been recorded or even suspected for the last two hundred years, I beg to bring your attention to the statement on page 650 of Abraham's chapter on leprosy in Allbutt and Rolleston's *System of Medicine* "that the last indigenous leper was seen in the Shetland Islands in 1798 and (that) a case occurred in Edinburgh in 1809."

Moreover, we are informed on page 656, with reference to "Instances of transmission in leprosy-free countries":

> The most important case of this kind yet known in this country is that recorded by Dr. Hawtrey Benson in Dublin. An Irish soldier returned from India with fully developed leprosy. For a year and a half his brother slept in the same bed with him, and he wore the leper's clothes after the latter's death. Three years later this brother, who had never been out of the United Kingdom, manifested leprosy and died of it. The diagnosis was confirmed by medical men well acquainted with the malady, and we may accept the case as conclusive. Similar instances, perhaps not quite so free from doubt, have also been recorded by Drs. Liveing, Rees, Atkinson, and others.

Dr. Abraham has, moreover, under his observation another case of leprosy, a young man of 20, who has never been out of the United Kingdom, and who contracted the disease from his parents, who were both lepers. The parents no doubt got infected in Poland, their native land, but developed leprosy in England.

There is no doubt possible that leprosy is contagious, though to a very slight extent, as experiments on animals clearly show. At the last Lepra Congress in 1909 the British Section held a special meeting and passed, amongst others, the following resolutions, namely:

I. Leprosy is spread by direct and indirect contagion from persons suffering from the disease.

II. Leprosy is not due to the eating of any particular sort of food, such as fish.

* * * * *

VI. Compulsory notification of every case of leprosy should be enforced.

Definite cases, showing the spread of leprosy in families, starting from a single case, are described in Knebler und Kirchner's book, *Die Lepra in Russland. Ein Reisebericht. (Klinisches Jahrbuch.* Jena, 1897.)

Therefore, it cannot but be admitted that the St. Pancras Borough Council were justified in passing the resolution they did.—I am, etc.,

London, S.W., March 11th. H. BAYON.

MOSQUITO DESTRUCTION.

SIR,—In reference to the letter of Dr. Elkington, of Brisbane,[1] stating that potassium cyanide in a strength of 1 in 15,000 of water failed to kill mosquito larvae, may I point out that I have failed to kill coleoptera by the vapour of hydrocyanic acid in an entomological killing bottle. I have also[2] observed that paramoecia can live for about fifteen minutes in 0.3 N solution of hydrocyanic acid (0.8 per cent.); for these protozoa hydrocyanic acid possesses only about one three-thousandth of the toxic power of the mineral acids.

Hydrocyanic acid cannot be depended upon to produce a lethal effect upon invertebrata comparable to that exerted upon mammalia.—I am, etc.,

Liverpool, Feb. 19th. J. O. WAKELIN BARRATT.

THE MAKING OF PHOTOMICROGRAPHS.

SIR,—The remark in your review (p. 496) of Mr. Barnard's book on *Photomicrography*, as to the frequent failure of prints as regards clearness and definition, has suggested my giving a hint, as an old worker at this branch, to others.

I may say that a good many years ago I used to do a good deal of photomicrography for medical friends, who were pleased with my results—my late friend, Sir Douglas Maclagan, was especially complimentary on results.

My plan is the following: Get, of course, as sharp a focus as possible, using a magnifier of low power on the focussing screen, and do not on any account try to get a large-sized negative at once. Using a rather slow plate, with as little grain as possible, and presuming that an eyepiece is used on the microscope, get the plate at such a distance from the eyepiece that the resulting negative will be 1 in. or 1.5 in. in diameter. After developing and fixing this, and seeing that it is free from fog, take a contact transparency (positive) from it, either on a fine make of lantern plate or with transparency carbon tissue. From this positive make a negative by means of a lantern to a diameter of double—perhaps more—also on a lantern or other grainless plate, and if this is not sufficiently large repeat the process by taking another transparency and re-enlarging. This may seem complicated and troublesome, but it is well worth the trouble. By this method I have had prints of 1,024 diameters and more with very great definition and clearness. Though, of course, the exposure is longer for a slow and grainless plate, I consider that it is compensated for by the clearness for the future enlargement.—I am, etc.,

North Berwick, March 5th. JOHN COCKBURN.

[1] BRITISH MEDICAL JOURNAL, January 13th, p. 106
[2] *Proc. Roy. Soc.*, vol. lxxiv, p. 100.

THE PROFESSION AND THE POLITICIANS.

SIR,—Mr. Raiment charges me with grave misstatements, but he has put his own interpretation on the facts I mentioned. In one particular he corroborates both my first and second statements, for Mr. Wilfrid Travers is one of the keenest and best Unionist workers in the West of London. Mr. Mackinnion, another of the stewards, is also a frequent worker in the same cause in Hammersmith. Whether they are members or not of the Constitutional Club there, they certainly organized their stewards under such auspices.

As the point at issue seems to be missed, may I briefly state it?

Dr. F. J. Smith and many of those associated with him in the organization of the Queen's Hall meeting, and also of the British Medical Association Reform Committee, have accused the Council in general (of whom two-thirds are Unionists) and Sir Victor Horsley in particular (a private member of Council and not on the committee which carried out the negotiations) of deliberately sacrificing the interests of the profession for political reasons. This is as serious a charge as can possibly be brought against any man. Persons who make such a charge should be careful to suppress any political animus they may have. Many of us know this has not been done, and whilst I quite admit that Mr. Raiment's ingenuous interpretation of the course of events may exonerate him and others from deliberately provoking the feeling which led to the deplorable scenes at the Queen's Hall, nevertheless the statements and actions did arouse strong political feelings, which resulted in such scenes.

As to the actual facts being as I stated, I am prepared to obtain affidavits.—I am, etc.,

London, S.W., March 18th. H. BECKETT-OVERY.

*** It is suggested to both sides that the prolongation of this controversy does not seem calculated to produce any further elucidation of the matters upon which opinions differ.

THE PRESS AND THE REPRESENTATIVE MEETING.

SIR,—It is very unfortunate that offence should have been taken at the request of the Chairman of the Representative Meeting "that no one in the gallery should communicate the proceedings to the press." I am quite sure that no one meant to offend. I understood the request as a general warning, knowing quite well at the same time that the alert press would manage to have a report of some kind. I was informed on the Wednesday that the report had been obtained by overhearing the discussion of the meeting in one of the dining rooms. This was quite a feasible way. We have from the beginning of our meetings been too much inclined to be secretive, and for no valid reason. We as a profession are asking from the Government and the public only what we consider our just rights, and we will attain those more readily by making the public conversant with them. The official report supplied to the press at the end of the Representative Meeting was excellent, only it must be remembered that the lay press in these days will not wait for a couple of days for any report, however excellent.—I am, etc.,

Hawick, March 12th. J. R. HAMILTON, M.D., etc.

*** Dr. G. Baynton Forge (West Malling, Kent), who was one of those in the gallery during the Representative Meeting in February, desires to associate himself with the disclaimers published in the JOURNAL of March 2nd and 9th.

HYPERMETROPIA AND HYPEROPIA.

SIR,—An essential qualification of a reviewer is that he should be more or less acquainted with the subject he reviews, and, at any rate, know its history.

Your reviewer in reviewing the third edition of my book on *Refraction of the Eye*, says: "We are more or less accustomed to the American method of clipping words, though we had hoped that English authors would escape infection, but here our old friend 'hypermetropia' is always alluded to as 'hyperopia.'" The correct historical facts are as follows:

The terms "emmetropia," "hypermetropia," and "brachymetropia" were originally suggested. At the

Heidelberg meeting in 1859 it was agreed that "myopia" was more universally used, and therefore the better word for "brachymetropia," and Helmholtz suggested that, this being so, *hyperopia* was better opposed to myopia than the longer word, and moreover coincided with the word first suggested by Ruete, namely "Uebersichtigkeit." In spite of Helmholtz and a few adherents, Donders strongly advocated the use of the longer word, and prevailed, and until quite recently "hypermetropia" has been generally used.

This history clearly proves that those who use the shorter word are not necessarily infected "with the American method of clipping words."—I am, etc.,

London, W., March 11th. ERNEST CLARKE.

Obituary.

SIR RICHARD BRAYN, M.R.C.S.Eng., L.R.C.P.Lond.,

HOME OFFICE EXPERT IN LUNACY, LATE MEDICAL SUPERINTENDENT, BROADMOOR ASYLUM.

SIR RICHARD BRAYN died at his residence in Southsea, after a short illness, on March 12th. He was the son of Mr. T. G. Brayn, of Market Drayton, Salop, and was born there in 1850. His earlier education was private, and he entered King's College in 1870. He had a distinguished student's career, taking the Junior Scholarship in 1871 and later the Second Year Scholarship, and finally the Senior Scholarship, besides being Prizeman in many subjects. He studied under the late Sir George Johnson and the late Sir William Fergusson, amongst others. After obtaining the diploma of M.R.C.S. in 1873, and those of L.R.C.P. and L.S.A. in the following year, he went for a voyage to South Africa and then entered the Prison Medical Service, being appointed in the year 1875 Assistant Surgeon to H.M. Convict Prison, Portsmouth, subsequently becoming Assistant Surgeon at H.M. Prison, Millbank. In 1879 he was appointed Medical Officer at H.M. Prison, Pentonville; his abilities in this more responsible charge were quickly recognized, and on the retirement of Dr. Campbell he was promoted, in August, 1882, to be Medical Officer of H.M. Prison, Woking, then the invalid convict prison, he also having charge of the insane convicts at this establishment. In 1889, on the death of Mr. Power, Dr. Brayn became Governor and Medical Officer of the female convict prison at Woking. Always taking the keenest interest in mental diseases, more especially in connexion with criminality, his prison career afforded him special facilities for this study, especially whilst he was at Woking. His shrewd common sense and sound judgement, together with the administrative powers he had displayed, marked him out for the office of Medical Superintendent of Broadmoor Criminal Lunatic Asylum when Dr. Nicolson was appointed Lord Chancellor's Visitor in Lunacy in 1896. In this important and arduous position, which he held for over fourteen years, Dr. Brayn established a reputation as an expert in criminal lunacy second to none; his independence of mind and courage in expressing his opinion commanded universal respect, and in consequence he was largely consulted by the Home Office in the many intricate and difficult questions which so frequently arise in that department. During his tenure of office at Broadmoor a considerable extension of the asylum was erected under his immediate supervision with most excellent results.

His administrative qualities were of the highest order, and he managed this important asylum with conspicuous success. The responsibility and anxiety attached to the post latterly began to tell on his health, and in 1910 he felt that it was time to relinquish much of his work; accordingly he retired from the superintendency in the latter part of the year 1910, although he retained his connexion with the asylum as an active member of the Council of Supervision, and continued to act as expert adviser to the Home Office until the time of his death. He received the honour of knighthood in the Coronation year.

He married Laura, daughter of the Deputy Inspector-General Fyscher Negus, R.N., who survives him, as also do one son and a daughter. A man of wide experience and knowledge of his special subject, always working hard at whatever he had in hand, he was also a keen lover of country life and sports, and, although not an extensive contributor to medical journals or societies, his official reports were always clear and cogent, bearing the impress of firm conviction. His loss will be very greatly felt by his many intimate friends and colleagues.

Dr. DAVID NICOLSON, C.B., writes: Sir Richard Brayn joined the prison service as my colleague in 1875, and since that date I have been much associated with him both officially and personally in various capacities. He succeeded me as Medical Superintendent of Broadmoor Asylum, and during the past five and twenty years we have together held statutory medical inquiries on behalf of the Home Office in many cases where the death sentence had been pronounced. I learnt to have the greatest respect for his judgement and skill in dealing with this important class of cases, and I know that the Home Office placed the highest value on his opinion. To me his death is a loss of an old friend, for whose excellent qualities I had the greatest esteem.

COLONEL LAMBKIN, A.M.S.,

LATE LECTURER IN SYPHILOLOGY, ROYAL ARMY MEDICAL COLLEGE.

COLONEL F. J. LAMBKIN died on March 8th at Bloemfontein aged 53. He received his medical education in the school of the Royal College of Surgeons of Ireland, and obtained the diplomas of L.R.C.P. and S.I. in 1880. He entered the service in 1881 and was promoted Major in July, 1893; Lieutenant-Colonel in July, 1901; Brevet Colonel in May, 1906; and substantive Colonel in April, 1911. He served in the South African war 1899–1902, taking part in the relief of Ladysmith, including the actions at Colenso, Spion Kop, and Vaal Kranz. He was also present during the operations in Cape Colony from November, 1900, to May, 1902. He received the Queen's medal with four clasps, and the King's medal with two clasps. In 1905 he was specially employed on the Army Head Quarters Staff, India, as Syphilologist, and subsequently became Lecturer in Syphilology at the Royal Army Medical College, London. At the time of his death he was Assistant Director of the Medical Service at Bloemfontein. Colonel Lambkin was best known to the profession for his work in connexion with the treatment of syphilis; he made many observations on the use of intramuscular injections of mercurial preparations, and his publications had much to do with extending the use of that method. Later he wrote on the use of arylarsonates in the treatment of syphilis. In 1907 he went to Uganda on a special mission for the Colonial Office to inquire into the ravages caused by syphilis among the population in that country. Colonel Lambkin contributed several papers on the treatment of syphilis to our columns, and was the author of the article on the treatment of syphilis in Power and Murphy's *System of Syphilis*.

THE LATE LORD LISTER.

THE Council of the Royal College of Surgeons of England at its meeting on March 14th adopted the following memorial minute:

MEMORIAL MINUTE.

By the death of Lord Lister, P.C., O.M., F.R.S., F.R.C.S.Eng., etc., on February 10th, 1912, Surgery has lost her most brilliant student and her greatest master, England one of her most famous sons, the world one of its most illustrious citizens.

He raised Surgery from a dangerous and precarious practice to a precise, safe, and beneficent Art, and in doing so his name became renowned throughout the civilized world. His methods have been adopted in every clime and country, and the benefits which flow from his discoveries are blessings conferred upon every race of mankind. His perspicacity, his natural insight, his fertility of resource, his power of close and discriminating observation, his philosophical reasoning, his inflexible pursuit of truth, his steadfastness of purpose, his capacity for taking pains, his unwearied patience, and his undaunted efforts to triumph over difficulties, stamped him as a great example of true and scientific genius.

The human sympathy which caused him to deplore the great mortality due to infective surgical disease, his solicitude to prevent suffering and premature death, his patient and unceasing labour to overcome them, and his gratification at the ultimate success of his efforts to ameliorate

pain and prolong life eminently distinguished him as a great philanthropist.

His gentle nature, his deep compassion, his courteous and dignified bearing, his imperturbable temper, his resolute will, his indifference to ridicule, his tolerance of hostile criticism, combined to make him one of the noblest of men.

His work will last for all time, its good results will continue throughout all ages, humanity will bless him for evermore, his fame will be immortal.

In the fullness of years, after a glorious and satisfyng career, crowned with great and various honours, having witnessed the successful completion of his work, the gentle hand of death laid hold upon him, and Lister passed from among us.

His funeral was a vast and striking testimony to the greatness and the usefulness of his life. His body perisheth, but the influence of his mind will continue everlastingly.

MEMORIAL TABLET.

It was decided to place a memorial tablet in a suitable and conspicuous position within the college, to serve as evidence to future generations of the honour, respect, and reverence in which the great founder of aseptic surgery was held by his contemporaries and immediate successors.

MANUSCRIPTS AND SKETCHES.

A letter was read from the solicitors to the executors of the late Lord Lister that under the terms of his will he requests that his nephews, Rickman John Godlee and Arthur Hugh Lister, shall arrange his scientific manuscripts and sketches, destroying or otherwise disposing of such as are of no permanent interest, and he bequeaths his said manuscripts and sketches when so arranged to the Royal College of Surgeons of England.

Public Health AND POOR LAW MEDICAL SERVICES.

AMALGAMATION OF OFFICES.

AN account was given in the JOURNAL for January 20th of a meeting of the Edmonton District Council at which a proposal was considered to publish an advertisement indicating that the offices of medical officer of health and school medical officer had been amalgamated, and inviting applications for appointment as senior and assistant medical officer respectively. The Local Government Board had expressed its approval of the amalgamation in view, but saw in that project no reason for declaring the office of medical officer vacant. The local medical profession had lodged a petition with the council deprecating the proposed advertisement, on the ground that Dr. Lawrence, the existing medical officer of health, was a man with whom they had always been able to work amicably. The meeting ended in a decision to consider matters again after the whole question had been discussed at a meeting of the council in committee on February 27th. This reconsideration took place at a meeting of the council on March 12th, and ended in a resolution to inform the Local Government Board that the council proposed to appoint Dr. Lawrence as medical officer and school medical officer at a salary of £450, and Dr. Rock, the present school medical officer as assistant medical officer at a salary of £300. During the debate, which was one of an exceedingly animated nature, an endeavour was made to persuade the council to adhere to the original proposal. The latter was characterized by several members as a proposal which merely concealed an intention to endeavour to get Dr. Lawrence replaced by some one else, despite the fact that he had always fulfilled his duties in a creditable manner. One member went so far as to say that while he did not know of a single charge that had ever been proved against their M.O.H., he had been present at meetings of the Sanitary Committee at which the M.O.H. had been bullied and insulted. This, he indicated, was not because Dr. Lawrence had failed in his duty, but because he had given offence in such way as summoning some one or other for letting a house which was damp and unfit for occupation. It was these men and their friends who were now trying to oust him out of his job.

SINCE July, 1911, a service of preventive vaccination against typhoid fever has been at work at the Hôtel-Dieu, Paris, under the direction of Professor Chantemesse. Vaccine is delivered free to practitioners who apply to the laboratory of hygiene of the faculty.

Medical News.

SIR WILLIAM MACEWEN will give an address on Lord Lister at the meeting of the Royal Institution of Great Britain on Friday evening, June 7th. Among other Friday evening discourses to be given at the Institution after Easter is one by Professor W. Stirling on the Gaumont speaking cinematograph films, and another on the use of pedigrees, by W. C. Dampier Whetham.

THE annual meeting of subscribers to the Cremation Society of England will be held at 20, Hanover Square, W., on Wednesday, March 27th, at 3 p.m.

WE are asked to state that the name of Professor Henri Hervieux, M.D., Laval University, Montreal, was accidentally omitted from the Canadian nominations to the Council of the Section of Therapeutics of the International Congress of Medicine to be held in London next year.

SIR RONALD ROSS, K.C.B., M.D., will deliver the Oliver-Sharpey Lectures on recent researches on malaria before the Royal College of Physicians of London on Monday, April 29th, and Tuesday, April 30th, at 5 p.m. on each day. The first lecture will deal with nosology and the second with endemiology.

A DISCUSSION on the therapeutic value of alcohol will be held by the Hunterian Society at the London Institution on Wednesday, March 27th, at 9 p.m. Sir Victor Horsley will open the discussion, and Sir Lauder Brunton, Professor Cushny, Drs. F. J. Smith, Stoddart, Goodall, and others are expected to speak at this or an adjourned meeting. All members of the profession are invited to attend.

THE meeting of the Medico-Psychological Association of Great Britain and Ireland for the March quarter was held at the Long Grove Asylum, Epsom, at the invitation of Dr. Hubert Bond, and was preceded by luncheon at which the leading members of the Asylums Committee of the London County Council were present. In the course of the proceedings great regret was expressed that the selection of Dr. Bond for the important position of Commissioner in Lunacy entailed the loss of his services by the County Council as a superintendent medical officer, and by the Medico-Psychological Association as one of its general secretaries. A visit was also paid to the admission hospital, the villas, wards, and various departments of the asylum. In the afternoon some papers were read, of which an account will be found at page 673.

THE spring dinner of the Irish Medical Schools' and Graduates' Association took place on the eve of St. Patrick's Day, and was, as usual, very well attended. Dr. H. Macnaughton-Jones, president of the association, was in the chair, and had as croupiers Dr. M. J. Bulger, chairman of council, Dr. J. J. O'Hagan, vice-chairman of council, Dr. W. P. Cockle, honorary treasurer, Drs. W. J. Corbett and Campbell Boyd, the two honorary secretaries, Dr. Shepherd Boyd, honorary provincial secretary, and Dr. Gilbert Richardson. In acknowledging the toast to "The Guests," and in reference to a wish expressed by its proposer, Dr. Douglas, that medical men would in future take a more prominent part in public affairs, Sir Thomas Boor Crosby said that the medical profession had never taken its proper stand in municipal or parliamentary life. As a class they were the best educated men in the kingdom, and if they would only take the trouble to get elected to urban, borough, and city councils they would soon find themselves leading members thereof. In such positions they could assist materially in dissipating the ignorance which was really responsible for the paltriness of the salaries sometimes offered to members of the noblest of professions. For many years he had himself been the only medical man on the Corporation of the City of London, and had often had opportunities of throwing a right light on the medical posts within its gift. He had had some hesitation in accepting the high office of Lord Mayor, but after considering the question in all its aspects had decided to accept that position for the sake of the profession to which he belonged, and to which he was deeply attached. The fact that he had held such a position would be a standing proof that a medical man in actual practice could not only attend at the bedside of the sick, but also play as useful a part in deliberations on public affairs of the highest importance as any other member of the community. In the course of the evening it was mentioned that the membership of the association now numbered 620.

Universities and Colleges.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examination indicated:

SECOND M.B., CH.B.—A. B. Bodman, J. W. Gilbert, W. K. A. Richards, D. G. C. Tasker, E. S. White.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on March 14th, Mr. R. J. Godlee, President, in the chair.

The late Lord Lister.

A memorial of appreciation of Lord Lister's achievements (see page 705) was directed to be printed in the Council's minutes, and a vote of condolence with the members of the late Lord Lister's family adopted.

Central Midwives Board.

The thanks of the Council were given to Mr. C. H. Golding-Bird for his services as representative of the College on the above board.

National Insurance Act.

The President reported that the committee on the National Insurance Act had held meetings on February 6th and 26th, and a joint meeting with the committee of the Royal College of Physicians and representatives of the Society of Apothecaries at the Royal College of Physicians on March 5th, and that at this joint meeting the following resolution was adopted:

> That the medical faculties of the universities of England and Wales be invited to send each a representative to join with the committees appointed by the Royal Colleges of Physicians and Surgeons and representatives of the Society of Apothecaries in endeavouring to safeguard the interests of their graduates, licentiates, Fellows, and members in so far as they may be affected by the National Insurance Act.

The President stated that he had received letters expressing appreciation of the attitude adopted by the Council in reference to the National Insurance Act.

Two Hundred and Fiftieth Anniversary of the Formation of the Royal Society.

The President was appointed as a delegate to the celebrations on July 15th, 16th, 17th, 1912, of the above society.

Bicentenary Festival of the Medical School of Trinity College, Dublin.

The President and Mr. C. Mansell Moullin, one of the Vice-Presidents, were appointed as delegates to the above festival.

International Historical Congress.

Sir John Tweedy was appointed to represent the College on the General Committee of Organization of the above Congress, to be held in London in 1913.

Method of Conducting Examinations.

A letter of February 28th, addressed to the President by Dr. Arthur Dean Bevan of Chicago was read. It stated that the members of the American Medical Association were greatly pleased with Mr. Hallett's address on methods of conducting examinations for licences to practise medicine, and thanking the President for having sent him to the conference.

Medico-Legal.

DEATH CERTIFICATES AND THE PATIENT'S CONFIDENCES.

E. M. G.—A practitioner is required by the Births and Deaths Registration Act, 1874, to give a certificate "stating to the best of his knowledge and belief the cause of death." If he has reasonable grounds for believing the cause was syphilis, he would appear to be bound to state it; but the Registrar-General recognizes a number of alternative terms—see *Manual of the International List of Causes of Death* (London: His Majesty's Stationery Office, 1s.), page 8, paragraph 37. Whether it is a libel to inform a wife that her husband is suffering from syphilis or gonorrhoea must depend upon circumstances. As a rule, the duty of the medical practitioner is towards the patient, and, after fully stating the facts to the patient, the matter should be left to his or her own conscience. If, in the other alternative, the case came to trial, the decision would no doubt depend upon circumstances. A recent case bearing upon this point was heard in 1902. The defendant was called in to attend the plaintiff, who was a barmaid at an hotel, and was requested by the manager to see her. As a result of his examination, he informed the housekeeper and the employer that the girl was suffering from venereal disease. Subsequently he made a similar statement to a man who represented himself to be the husband of the plaintiff, though this was shown later not to be the case. It was alleged that he had also made a communication to another barmaid, but this the defendant denied. The judge ruled that the communications to the manageress and the employer, and to the man who represented himself to be the husband, were privileged, but left it to the jury to decide on the evidence as to the communication to the other barmaid, and they found a verdict for the plaintiff with £75 damages.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

X. asks for advice in the treatment of a patient in the third month of gestation who is troubled with violent flatulence (oral). It comes on especially about 7 p.m., and lasts till sleep, and is accompanied by violent shivering. The patient is healthy otherwise, and can usually retain all meals except supper. Sodium bicarbonate, salicylates, bismuth, valerian, and adrenalin have been tried for six weeks without much success.

R. J. B. desires to hear whether the Hastings Truss Company of Philadelphia has an agency in this country, and, if so, the address.

COLLIERS, STRIKES, AND MEDICAL ATTENDANCE.

COLLIERY DOCTOR (Scotland) writes: (1) Is it usual during a miners' strike that the weekly payment of 3d. per man for the doctor should be stopped? The doctors here pay a commission of 5 per cent. to the clerk for collecting the fees. Is this usual elsewhere? (2) It is the custom for managers and clerks with their families to be attended free of charge. Is this the case in other places? (3) In the event of the miners refusing to pay the 3d. per week per head after the Insurance Act comes into force, what is to be done with the view of enforcing the doctors' demands? (4) Is there no way whereby the doctor might be paid this 3d. per man except through the colliery office? (5) Who has the legal right to order a miner to go to see the medical referee? (6) I give a man a certificate to say that the workman is suffering from beat knee. He is sent by train seven miles to see the medical referee, who is paid 5s., which is refunded by the Miners' Union.

*** The following answers are given for the information of our correspondent, but must not be taken to have any official authority:

1. It is usual during a miners' strike for the weekly payments to the doctor to be stopped. In some cases, however, the belated payments are collected by instalments as arrears, after the miner resumes work at the end of the strike. It is customary in some places to pay a small commission to the clerk or to a committee of workmen for collecting fees.

2. It is not the custom for a manager to be attended free but it is occasionally customary for a clerk to be attended, by paying through the office as an ordinary miner, but this does not include families. An ordinary underground working manager ranks as a miner, and therefore gets his medical services as such.

3. It has been decided that 8s. 6d. is the minimum per capita rate that a doctor should undertake contract work for, but, of course, the 3d. per week referred to in this question includes attendance upon wives and children. This latter is a matter that will have to be arranged later by colliery doctors either through the miners' union or otherwise, but cannot be insisted on, meantime at least, so there is no question of "enforcing" in the business.

4. It is not thought likely that the colliery office will be one of the channels through which the colliery doctor will be paid after the Act comes into force. He will be paid through one of the recognized channels under the Act—such as an approved society—unless, of course, medical benefits are altogether removed from the Act, and then the insured person will have to be tackled himself; here enforcing may come in.

5. The only person who has a right to order a miner to go before a referee is the arbitrator, namely, the Sheriff in

Scotland, and that only after medical evidence in a court case is conflicting. Most of the references to a referee, however, are by mutual arrangement between master and man. An employer has the right to dispute a certificate of a certifying factory surgeon and to send the workman before a referee with a view to getting the latter's opinion upon the matter.

6. This question—if it be one—is rather involved and is more or less, surely, a statement of fact, unless it refers to what is mentioned in No. 5—the employer disputing the certificate of a certifying factory surgeon and sending the man before a medical referee. The medical referee is, according to statute, paid £2 2s. (not 5s.) for a first reference and a certifying factory surgeon 5s. usually for certificates of "beat knee" and such like.

PROSTATECTOMY.

M. C. asks for any clinical data concerning the after-effects of enucleation of the prostate, as to whether the urine becomes quite normal, and after what interval, also whether urination is of normal frequency. Is there much pain for the first few days after the operation? What is the usual time required for convalescence? Is the operation to be advised in a case in which the amount of residual urine is only 3 oz.?

ANSWERS.

COLLIERY SURGEON.—In Greer's *Industrial Diseases and Accidents* "beat knee" is stated to be inflammation of the bursa over the patella, and it is added that miners are specially liable to this trouble. We cannot, of course, give an opinion on the diagnosis.

DR. H. J. THORP (Ipswich) writes: In reply to "Urticaria," the itching may be allayed by daily warm bath, temperature 95° to 100°, and the use of carbolized vaselin. Internally: Sodae iodi grain v, liq. arsenicalis ♏ v, in a little milk, three times a day after meals.

MR. A. V. KENAH, chartered accountant, Vancouver, writes from Brighton in answer to "R. C. W." (BRITISH MEDICAL JOURNAL, March 2nd, p. 528), to say that Vancouver has a dry summer but wet winter. Victoria has considerably less rainfall in the winter, but more wind and is cold at nights. He suggests that our correspondent should write to the Agent-General for British Columbia, Salisbury House, London, E.C., for data regarding rainfall, etc., for both of these places.

SOFT CORNS.

H. J. T. writes: In reply to "Sufferer," if there is any inflammation about soft corns, they should be treated with boric lotion on lint. If chronic, by an application of acid salicylic, 30 parts; ex. Indian hemp, 5 parts; flexile collodion, 240 parts.

DR. JAS. P. BOLTON (Nottingham) writes: Tincture of iodine is an excellent application for soft corns. A small piece of cotton-wool should be worn between the toes.

X RAYS AS A PROPHYLACTIC.

DR. G. GILBERT SCOTT (London) writes in answer to "J. H. W." (March 9th, p. 587): On account of the beneficial effect of *x*-ray treatment on local recurrence after amputation of the mamma for carcinoma—the correct technic being used—the treatment should certainly be used as a prophylactic. It is impossible to state definitely its value as yet, but with our present knowledge it should certainly be used. Dosage is important: The axilla to xiphisternum; also an area posteriorly in region of the angle of the scapula should receive at least twelve doses. Of course *x* rays can only prevent superficial recurrences, not intrathoracic deposits. An aluminium filter of suitable thickness will prevent all dangerous irritation of the skin.

LETTERS, NOTES, ETC.

MORPHINE POISONING.

DR. D. M. MACDONALD (Leven, Fife) writes: When I wrote in your issue of February 3rd that Condy's fluid was used in the above case I meant exactly what I there and then stated. May I ask Dr. Barker Smith a question: Does he seriously contend that potassium permanganate has chemically any specific advantage over sodium permanganate (Condy's fluid) as an oxidizing agent for morphine? It has been generally accepted that the permanganate action was purely that of a *local* antidote, and when Dr. B. Smith cites the case of Dr. Moore, who took 3 grains of morphine followed by 4 grains of permanganate, he meant, I take it, to illustrate and confirm that. Now, it may be remembered that the particular infant when first seen had had the morphine four hours and that all the symptoms of absorption were present. One could appreciate the use of stomach lavage with permanganate since morphine is secreted in the latter organ from the circulation, but I was, and still am, sceptical of the efficacy of bowel lavage with permanganate, and apparently Dr. Smith, in spite of "past and laborious work," is not prepared to maintain that permanganate under such conditions can be truly described as a physiological antidote.

DR. STEPHEN G. LONGWORTH (Melton, Suffolk) writes: The letter under the heading "Morphine Poisoning," by Dr. J. Barker Smith, in the issue for February 17th, referring to the internal administration of potassium permanganate with a view to its subsequent oxidizing action, leads me to record this brief note of a case of asylum dysentery in which a line of treatment was adopted as recommended by Professor L. Rogers, I.M.S., and referred to in an annotation in the BRITISH MEDICAL JOURNAL for September 16th, 1911. It consisted in the administraiion of pills of potassium permanganate 2 grains, keratin-coated in order to delay solution until reaching the intestine, and administered every quarter hour for three hours, and then half hourly until the motions become green-coloured, which usually (according to Professor Rogers) happens within twelve hours, indicating oxidation of the bile. The patient with whom I tried this treatment was a young imbecile girl with a very acute attack; the motions were of the typical slimy "blood and mucus" character. On examining the stools on the day following the commencement of the treatment, numerous small dark pellets were observed mixed with the motions which had undergone no change. These pellets proved to be the pills which had passed through unaltered, and on crushing yielded the characteristic colour of the permanganate salt. The pills had been freshly prepared with kaolin ointment as excipient, and coated with fresh keratin solution.

TWINS.

PASTOR writes: What appeared to me as an unusual and interesting case took place this month, and I have been urged to report it: After delivering a lady of a small child (by forceps and chloroform), delay with afterbirth caused *post-partum* haemorrhage. I gave ergot and introduced my hand and took away the placenta, felt all round for a second child, washed out, and left the case. Two days afterwards I was sent for, and found the lady in labour again, when I delivered another small child. All are doing well. I think there must have been at first an hour-glass contraction with the second child above.

PUTTING SALT ON A DEAD BODY.

DR. HOWARD DISTIN (Enfield) writes: Quite recently I attended a woman in poor circumstances dying of dropsy. When I visited her after death I noticed a large plate of salt on her abdomen. On inquiry, I was told quite seriously it was put there to keep the body from bursting!

BORIC ACID.

DR. F. PRYCE JONES (Newtown, Mid-Wales) writes: In connexion with the paper on boracic acid poisoning (BRITISH MEDICAL JOURNAL, March 16th, p. 605), I recollect the following: A healthy infant about 6 months old began to waste rapidly, and before long haemorrhages of the mouth and bowel occurred several times. I found that the child was given a comforter to suck very frequently, the same being freely smeared with borax and honey. This being stopped, the infant speedily recovered.

GASTROLITH.

DR. F. PRYCE JONES (Newtown, Mid-Wales) writes: If the writers of the paper, A Case of Vegetable Gastrolith (BRITISH MEDICAL JOURNAL, March 16th, p. 606), will refer to the *Lancet* of February 4th, 1899, they will see a case reported of a woman who had been eating rags, and developed gastric symptoms; later an abscess formed in the umbilical region. When the abscess broke, a strip of coarse cotton material 9½ in. long was removed, and recovery ensued.

ARTHRITIS.

MR. C. GORDON WATSON (London, W.) writes: I have read with much interest an interesting article by Dr. J. Rupert Collins in your issue of March 16th, p. 603, on some cases of infective arthritis, in which he demonstrated the primary focus of infection and the infecting organism, and obtained a cure for the arthritis by means of the appropriate vaccine, and I was particularly interested in Case VI, in which he demonstrated an organism in a case of acute arthritis and endocarditis, which he describes as the *Diplococcus rheumaticus*, and in which he cured the patient by means of a vaccine made from this culture. I should be interested to know if Dr. Collins has preserved this culture, or if he has made any experiments with a view to reproducing acute arthritis and endocarditis in animals. If Dr. Collins would be kind enough to supply me with a sample of this culture, I should be very pleased to carry out investigations on these lines. Hitherto few pathologists have been able to confirm the researches of Drs. Poynton and Paine in this direction, and it would be a pity to miss an opportunity like this if Dr. Collins has not already availed himself of it.

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